AM/FM STEREO RECEIVER

SX-750

SERVICE MANUAL

PIONEER STEREO RECEIVER MODEL SX-750
POWER
STEREO
AM
FM
PHONO
AUX
SPEAKERS
BASS
TREBLE
TONE
HIGH FILTER
BALANCE
VOLUME
LOUDNESS
MODE
DUPLICATE
TAPE MONITOR
FUNCTION
FM MUTING
PHONES
MIC

PIONEER

This Service Manual is applicable only to the KC, KU model.

CONTENTS

1. SPECIFICATIONS 5
2. FRONT PANEL FACILITIES 7
3. CONNECTION DIAGRAM 9
4. BLOCK DIAGRAM 11
5. CIRCUIT DISCRIPTIONS
   - 5.1 AM Tuner 13
   - 5.2 FM Tuner 13
   - 5.3 FM Muting Circuit 15
   - 5.4 Phono Equalizer Amplifier 15
   - 5.5 Microphone Circuit 15
   - 5.6 Tone Control 15
   - 5.7 Protection Circuit 16
   - 5.8 Power Amplifier Circuit 17
   - 5.9 Power Supply 17
6. ADJUSTMENTS
   - 6.1 AM Section 18
   - 6.2 FM Section 19
   - 6.3 MPX Adjustment 20
   - 6.4 Power Amplifier Section 21
7. DIAL CORD STRINGING 22
8. LEVEL DIAGRAM 23
9. DISASSEMBLY 24
10. PARTS LOCATION
    - 10.1 Front Panel View 25
    - 10.2 Front Panel View (with removed front panel) 27
    - 10.3 Top View 29
    - 10.4 Bottom View 31
    - 10.5 Rear View 33
11. EXPLODED VIEW 35
    - 11.1 Part I 37
    - 11.2 Part II 38
    - 11.3 Part III 39
    - 11.4 Part IV 40
    - 11.5 Part V 41
    - 11.6 Part VI 42
    - 11.7 Part VII 43

11.8 Packing 44

12. SCHEMATIC DIAGRAMS P.C. BOARD PATTERNS AND PARTS LIST

12.1 Schematic Diagrams 45
12.2 Miscellaneous Parts 47
12.3 Internal Circuitry of Integrated Circuits 48
12.4 Filter & Muting Assembly (AWM-094) 50
12.5 Tone Control Assembly (AWG-046) 52
12.6 Power Amplifier Assembly (AWH-046) 54
12.7 Power Supply & Protection Assembly (AWR-099) 58
12.8 Power Supply Assembly (AWR-100) 62
12.9 Headphone Jack Assembly (AWX-106) 64
12.10 Tuner, AF & Control Assembly (AWE-073) 65
12.11 Amplifier Assembly (AWK-065) 73
12.12 De-emphasis Switch assembly (AWX-095) 74

1. SPECIFICATIONS

Semiconductors

FET	1
ICs	7
Transistors	42
Diodes	40

Amplifier Section

Continuous Power Output from 20 Hertz to 20,000 Hertz	
(Both channels driven)	50 watts per channel (8 ohms) 60 watts per channel (4 ohms)
Total Harmonic Distortion	
(20 Hertz to 20,000 Hertz, from AUX)	
Continuous Rated Power Output	No more than 0.1%
25 watts per channel power output, 8 ohms	No more than 0.05%
1 watt per channel power output, 8 ohms	No more than 0.05%
Intermodulation Distortion	
(50 Hertz: 7,000 Hertz=4:1, from AUX)	
Continuous Rated Power Output	No more than 0.1%
25 watts per channel power output, 8 ohms	No more than 0.05%
1 watt per channel power output, 8 ohms	No more than 0.05%
Damping Factor	
(20 Hertz to 20,000 Hertz)	30
Input (Sensitivity/Impedance)	
PHONO	2.5mV/50k ohms
MIC	5mV/50k ohms
AUX	150mV/50k ohms
TAPE PLAY 1	150mV/50k ohms
TAPE PLAY 2	150mV/50k ohms
TAPE PLAY 2 (DIN connector)	150mV/50k ohms
PHONO Overload Level (T.H.D. 0.1%)	200mV (1kHz)
Output (Level/Impedance)	
TAPE REC 1	150mV
TAPE REC 2	150mV
TAPE REC 2 (DIN connector)	30mV/80k ohms
SPEAKER	A, B, A+B
HEADPHONES	Low Impedance
Frequency Response	
PHONO (RIAA equalization)	30 Hertz to 15,000 Hertz ±0.2dB
AUX, TAPE PLAY	10 Hertz to 50,000 Hertz $^{+0}_{-1}$ dB
Tone Control	
BASS	+8dB, –7dB (100 Hz)
TREBLE	+9dB, –7dB (10 kHz)
Filter	
HIGH	6 kHz (6dB/oct.)
Loudness Contour (Volume control set at –40dB position)	+6dB (100 Hz), +3dB (10 kHz)
Hum and Noise	
(IHF, short-circuited, A Network, rated power)	
PHONO	70dB
AUX, TAPE PLAY	90dB

FM Section

Usable Sensitivity		MONO	10.7dBf (1.9µV)
		STEREO	19.0dBf (9.8µV)
50dB Quieting Sensitivity		MONO	17.2dBf (4.0µV)
		STEREO	39.2dBf (50µV)
Signal to Noise Ratio at 65dBf		MONO	72dB
		STEREO	67dB
Distortion at 65dBf	100Hz	MONO	0.15%
		STEREO	0.3%
	1kHz	MONO	0.15%
		STEREO	0.3%
	6kHz	MONO	0.4%
		STEREO	0.4%
Frequency Response			30Hz to 15,000Hz $^{+0.2}_{-2.0}$ dB
Capture Ratio			1.0dB
Alternate Channel Selectivity			80dB
Spurious Response Ratio			90dB
Image Response Ratio			80dB
IF Response Ratio			100dB
AM Suppression Ratio			55dB
Muting Threshold			14dBf (2.8µV)
Stereo Separation			40dB (1kHz), 30dB (30Hz ~15kHz)
Subcarrier Product Ratio			62dB
SCA Rejection Ratio			62dB
Antenna Input			300 ohms balanced 75 ohms unbalanced

AM Section

Sensitivity (IHF, Ferrite antenna)	300µV/m
(IHF, Ext. antenna)	15µV
Selectivity	35dB
Signal to Noise Ratio	50dB
Image Rejection	40dB
IF Rejection	65dB
Antenna	Built-in Ferrite Loopstick Antenna

Miscellaneous

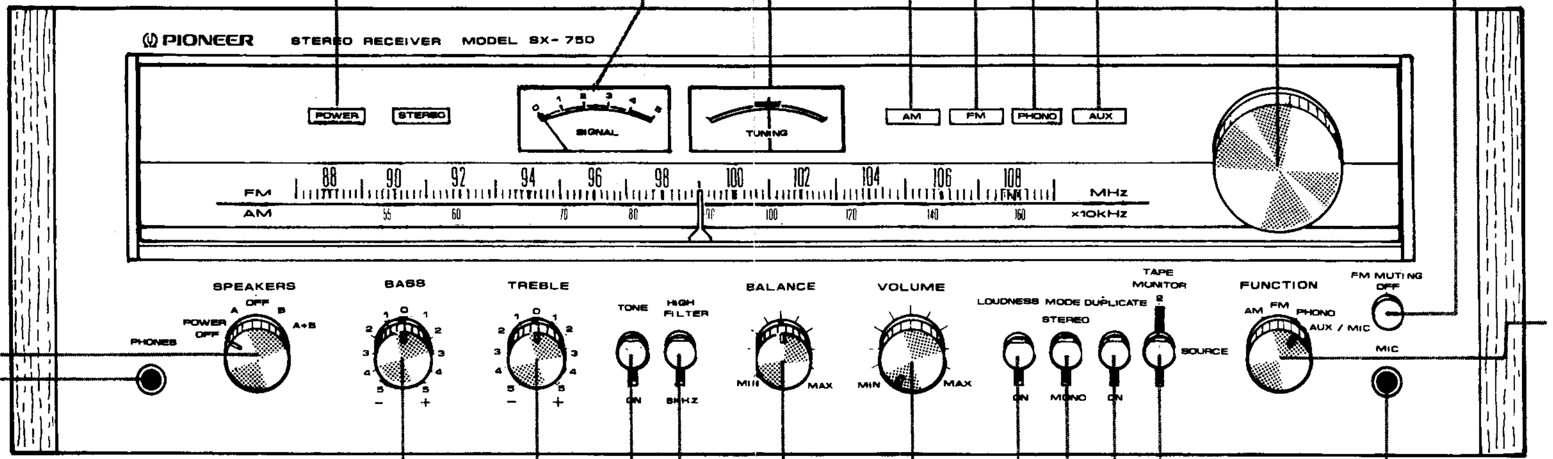
Power Requirements	120V, 60Hz
Power Consumption	160W (UL), 350W (max.)
Dimensions	480(W) x 149(H) x 371(D)mm 18-7/8 (W) x 5-7/8(H) x 14-5/8(D)in.
Weight without package	13.7kg(30 lb 2 oz)
with package	15.3kg (33 lb 11 oz)

Furnished Parts

FM T-type Antenna	1
Operating Instructions	1

NOTE:
Specifications and design subject to possible modification without notice, due to improvements.

2. FRONT PANEL FACILITIES



POWER INDICATOR LAMP

Lights when SPEAKERS switch is moved to any position from POWER OFF, and AC power is supplied to the receiver.

SPEAKERS SWITCH

Functions both as power switch and speaker selection switch.

POWER OFF: AC power is off.
A: Sound will be heard from speakers connected to A speaker terminals.
OFF: No sound will be heard from speaker systems. This position should be used when listening with headphones.
B: Sound will be heard from speakers connected to B speaker terminals.
A + B: Sound will be heard from speakers connected to A terminals and from speakers connected to B terminals.

PHONES OUTPUT

Insert headphone plug into this jack when headphone listening is desired. In this case, SPEAKERS switch should be in OFF position.

BASS, TREBLE CONTROLS

For tone adjustment when TONE switch is in ON position. When knobs are turned clockwise from "0" position, response in bass or treble range, respectively, is boosted. Turning counterclockwise attenuates response.

TONE SWITCH

Controls ON-OFF operation of tone control circuit. In the ON position, tone control by means of BASS and TREBLE knobs may be accomplished. In the OFF position, the tone control circuit is bypassed and frequency response in high and low ranges is flat.

HIGH FILTER SWITCH

For high frequency noise due to scratches on the record, place switch in 6kHz position. This will provide 6dB/octave attenuation at frequencies above 6kHz. For normal operation switch should be in OFF (upper) position.

SIGNAL METER

For FM and AM reception, turn TUNING knob until needle of the SIGNAL meter is deflected a maximum to the right.

STEREO INDICATOR LAMP

Lights when FM stereo broadcast is being received.

BALANCE CONTROL

For adjustment of relative output levels of L and R channels of speaker systems or headphones. Clockwise rotation from center position increases volume of R over L channel. Counterclockwise rotation increases volume of L channel over R.

VOLUME CONTROL

For adjustment of speaker or headphone output level. Level increases with clockwise rotation of knob.

LOUDNESS SWITCH

For listening at low volume level, placing this switch in the ON position will boost response in low and high frequency ranges.

The response of the human ear to low and high sound volumes is different. At low volume levels, the ear is relatively insensitive to sounds at either extreme of the frequency scale. By means of the LOUDNESS switch, these sounds are given additional amplification.

FM TUNING METER

With the needle of the SIGNAL meter deflected to the right, fine-tune FM broadcast by centering needle of TUNING meter.

MODE SWITCH

For selection of stereophonic or monophonic mode of playback. In normal operation, switch should be in STEREO position. In the MONO position, R and L channel signals will be mixed, and sounds coming from speakers of both channels will be the same.

NOTE:
Recording stereophonically with the MODE switch in the MONO position may cause channel separation to deteriorate.

DUPLICATE SWITCH

With switch in ON position, signals recorded on one of two tape decks connected to the receiver may be recorded onto the other, with or without editing. For normal operation, this switch must be in OFF (upper) position.

PROGRAM SOURCE INDICATORS

Indicate program source selected by means of FUNCTION switch.

TUNING KNOB

For selection of FM or AM stations.

FM MUTING BUTTON

For selection of FM broadcasts, button should be in ON (released) position.

When button is in ON position, unpleasant interstation noise is suppressed. When signal strength is poor, it may not be possible to bring in the desired station if MUTING is ON. In this case, press button to place it in the OFF position.

FUNCTION SELECTOR

For selection of program source.

AM: AM broadcasts
FM: FM broadcasts
PHONO: Playing records
AUX/MIC: For use of component connected at AUX terminals of receiver, or microphones which may be plugged into MIC jack.

NOTE:
AUX and MIC program sources cannot be used simultaneously. When using AUX hi-fi component, microphone should be disconnected.

MIC JACK

Accepts standard 6mmϕ plug. Microphone input signal enters both R and L channels.

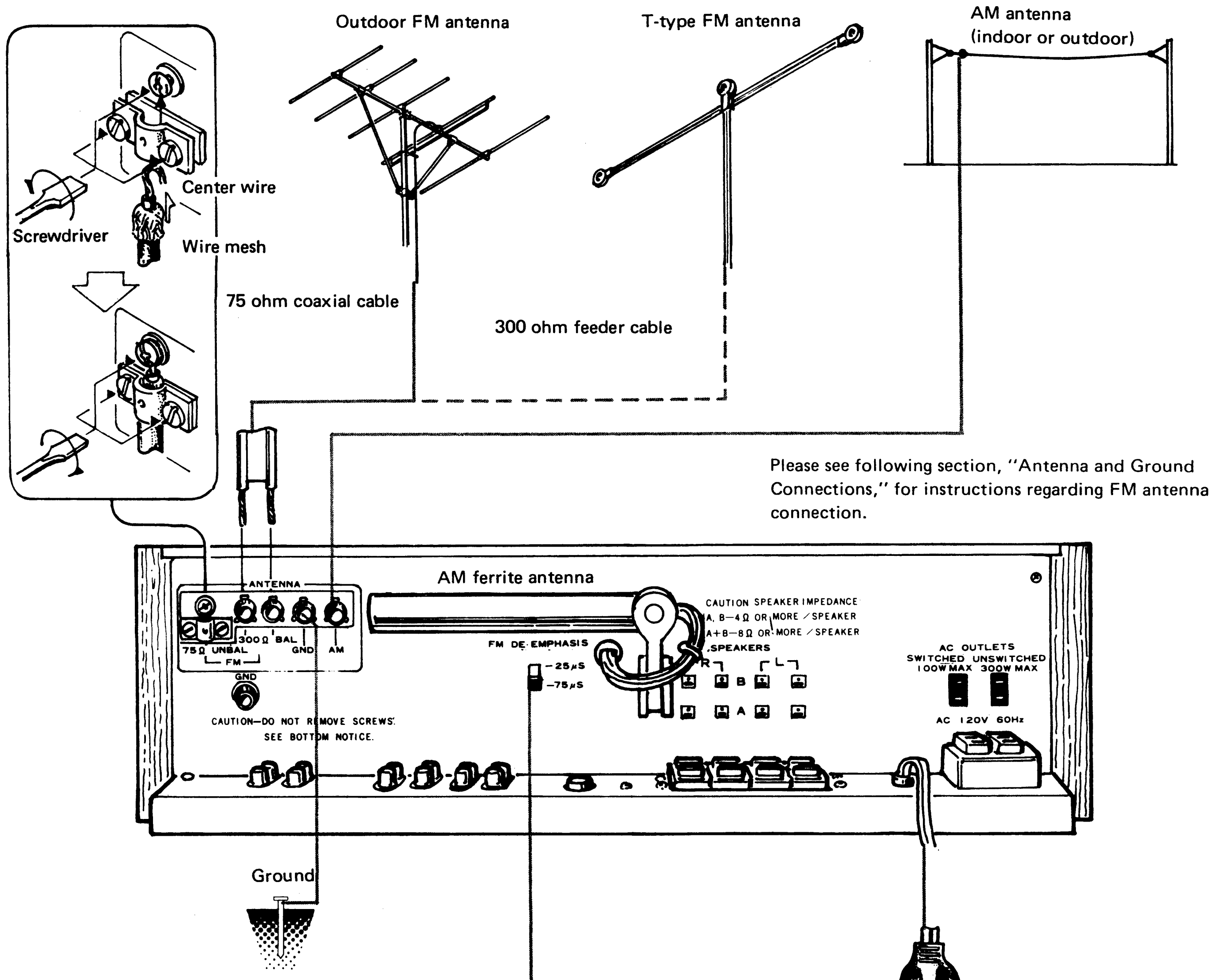
TAPE MONITOR SWITCH

1: For program sources other than tape deck (playback). (REC or PLAY).
SOURCE: For program sources other than tape deck (playback).
2: For monitoring of playback or record mode of tape deck connected to TAPE 2 terminals (REC or PLAY).

NOTE:
When not monitoring record or playback mode of a tape deck, switch should be in SOURCE position. In position 1 or 2, the program source indicated by the FUNCTION selector will not be heard through speaker systems or headphones.

3. CONNECTION DIAGRAM

REAR VIEW

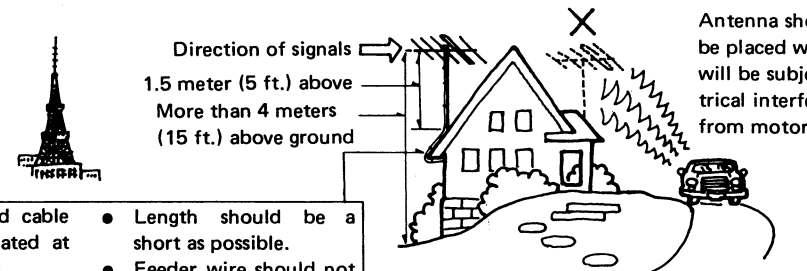

Outdoor FM antenna
T-type FM antenna
AM antenna
(indoor or outdoor)
Center wire
Screwdriver
Wire mesh
75 ohm coaxial cable
300 ohm feeder cable
AM ferrite antenna
ANTENNA
300Ω BAL
75Ω UNBAL
FM
GND
AM
GND
CAUTION—DO NOT REMOVE SCREWS.
SEE BOTTOM NOTICE.
FM DE-EMPHASIS
–25μS
–75μS
CAUTION SPEAKER IMPEDANCE
A, B—4Ω OR MORE / SPEAKER
A+B—8Ω OR MORE / SPEAKER
SPEAKERS
R
L
B
A
AC OUTLETS
SWITCHED UNSWITCHED
100W MAX 300W MAX
AC 120V 60Hz
Ground

Please see following section, "Antenna and Ground Connections," for instructions regarding FM antenna connection.

FM de-emphasis switch: For normal FM reception this switch should be set on "75μS" (unit is set to this when leaving factory). The "25μS" setting is used only when listening to FM Dolby* transmissions. When listening to FM Dolby transmissions, it will be necessary to use an NR adaptor which can be purchased separately. More detailed instructions will be found in the section, "FM Dolby Reception."

ANTENNA PLACEMENT

Make note of the following points when choosing a location for the FM antenna.


Direction of signals
1.5 meter (5 ft.) above
More than 4 meters
(15 ft.) above ground

Antenna should not be placed where it will be subject to electrical interference from motor vehicles.

- Feeder wire and cable should be insulated at mounting points.
- Length should be a short as possible.
- Feeder wire should not be coiled.

Fig. 1

TOP VIEW

Accessory AC outlets:

Switched ...... Power to this outlet is controlled by the SX-750 power switch. When power to the receiver is "On," this outlet will provide AC current (**100 watts maximum**).

Unswitched ..... Power to this outlet is not controlled by the SX-750 power switch. As long as the power cord is plugged into a live outlet, this outlet will supply AC current (maximum 300 watts).

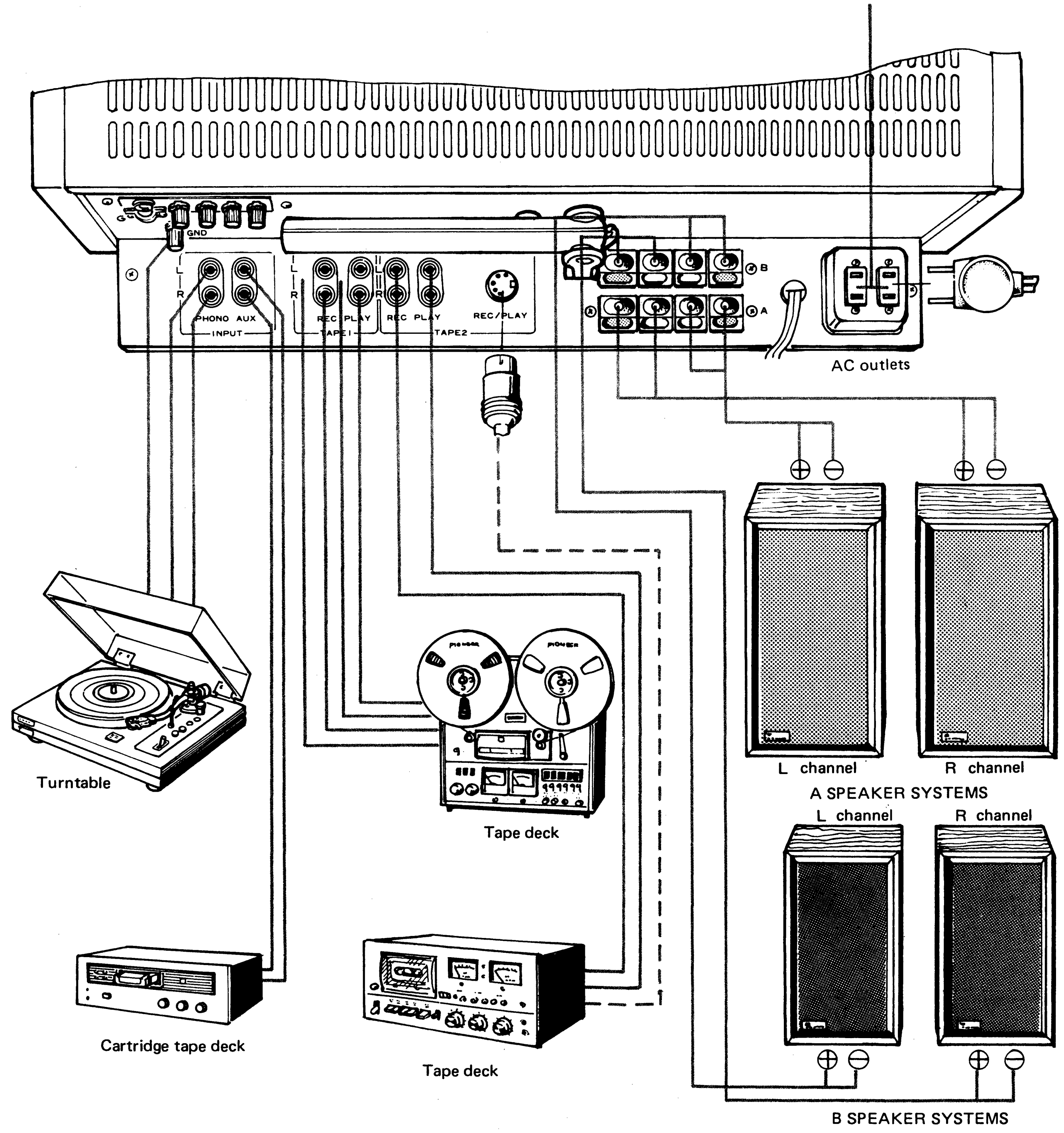
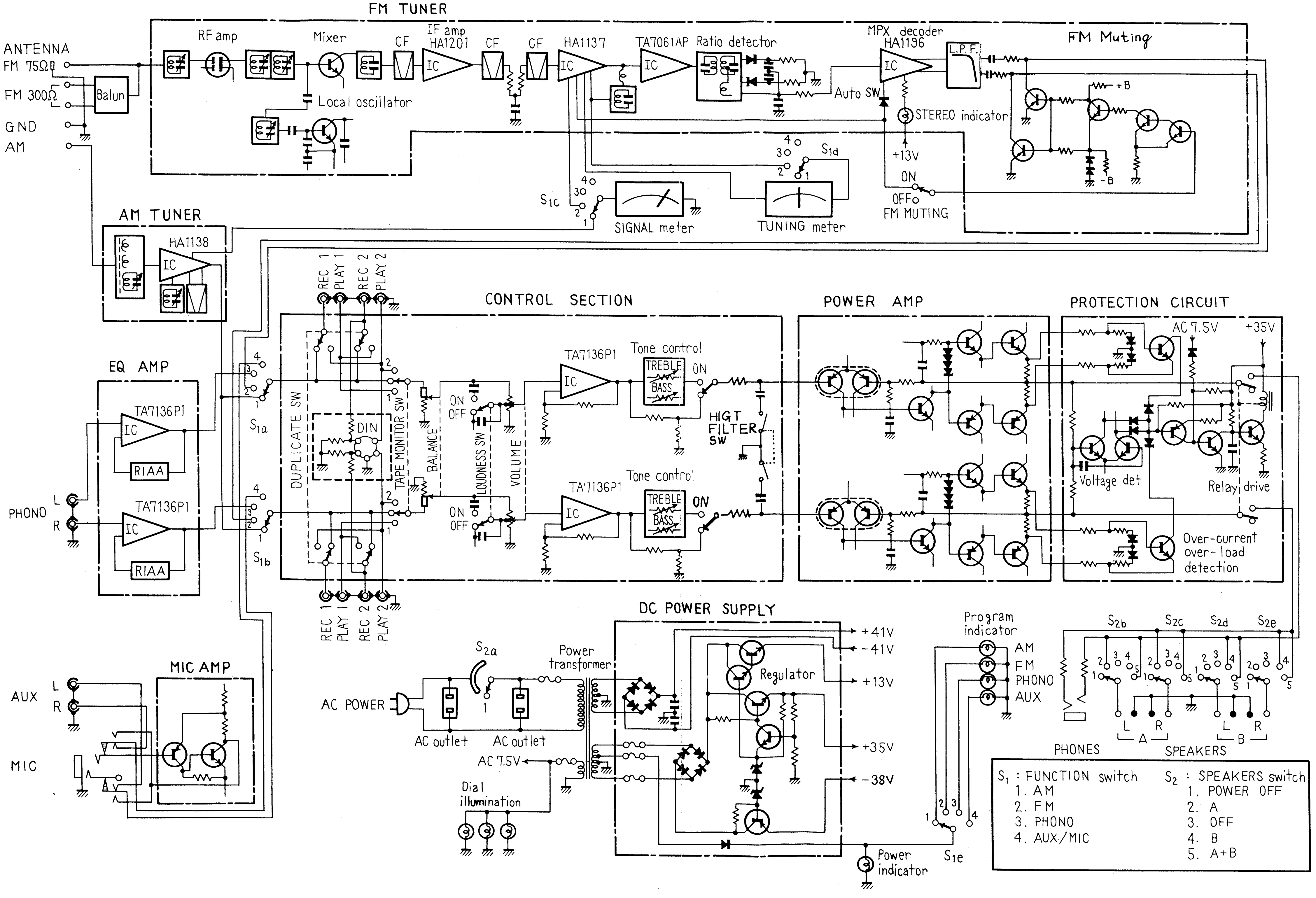

GND
L
R
PHONO AUX
INPUT
REC PLAY
TAPE1
REC PLAY
TAPE2
REC/PLAY
B
A
AC outlets
Turntable
Tape deck
L channel
R channel
A SPEAKER SYSTEMS
L channel
R channel
Cartridge tape deck
Tape deck
B SPEAKER SYSTEMS

Fig. 2

4. BLOCK DIAGRAM



FM TUNER
ANTENNA
FM 75Ω
FM 300Ω
Balun
GND
AM
RF amp
Mixer
Local oscillator
CF
IF amp
HA1201
IC
CF
CF
HA1137
IC
TA7061AP
IC
Ratio detector
MPX decoder
HA1196
IC
L.P.F.
Auto SW
STEREO indicator
+13V
FM Muting
+B
-B
S1c
SIGNAL meter
TUNING meter
S1d
ON
OFF
FM MUTING
AM TUNER
HA1138
IC
EQ AMP
TA7136P1
IC
RIAA
TA7136P1
IC
RIAA
PHONO
L
R
S1a
S1b
REC 1
PLAY 1
REC 2
PLAY 2
CONTROL SECTION
DUPLICATE SW
DIN
TAPE MONITOR SW
BALANCE
LOUDNESS SW
VOLUME
ON
OFF
TA7136P1
IC
Tone control
TREBLE
BASS
ON
HIGT FILTER SW
POWER AMP
PROTECTION CIRCUIT
AC 7.5V
+35V
Voltage det
Relay drive
Over-current over-load detection
MIC AMP
AUX
L
R
MIC
DC POWER SUPPLY
AC POWER
S2a
AC outlet
AC outlet
Power transformer
AC 7.5V
Dial illumination
Regulator
+41V
-41V
+13V
+35V
-38V
Power indicator
S1e
Program indicator
AM
FM
PHONO
AUX
S2b
S2c
S2d
S2e
PHONES
L
R
A
L
R
B
SPEAKERS
S1 : FUNCTION switch
1. AM
2. FM
3. PHONO
4. AUX/MIC
S2 : SPEAKERS switch
1. POWER OFF
2. A
3. OFF
4. B
5. A+B

5. CIRCUIT DESCRIPTIONS

5.1 AM TUNER

Composed of single IC (HA1138) combining a 1 stage RF amplifier and a 2 stage IF amplifier (Fig. 1).

5.2 FM TUNER

Front End

The outstanding performance, exemplified by the remarkable 80dB imaging and 90dB spurious rejection, originates in the dual-gate MOS FET RF amplifier and 4-gang variable capacitor tuning circuit. A modified Clapp circuit is employed in the local oscillator, leading to high frequency stability. Since the output is taken from the oscillator tuning circuit, higher harmonics in the oscillator signal and spurious response become reduced.

IF Amplifier and Detector

Comprise 2 dual element ceramic filters, 1 transistor, and 1 IC (integrated circuit). The IC (HA1137) circuit is illustrated in Fig. 2.

FM IF Amplifier and Detector Circuit

Three dual element ceramic filters, an IC (HA1201) containing a differential amplifier, and an IC (HA1137) containing a 3-stage limiter amplifier compose the FM IF amplifier. Fig. 2 shows the HA1137 block diagram (see circuit diagram on page 65).

In addition to limiter amplifier, the HA1137 IC includes detector, meter drive circuits. The detector circuit in the HA1137 is not employed in this set however a separate ratio detector circuit is employed instead, resulting in improved S.N ratio.

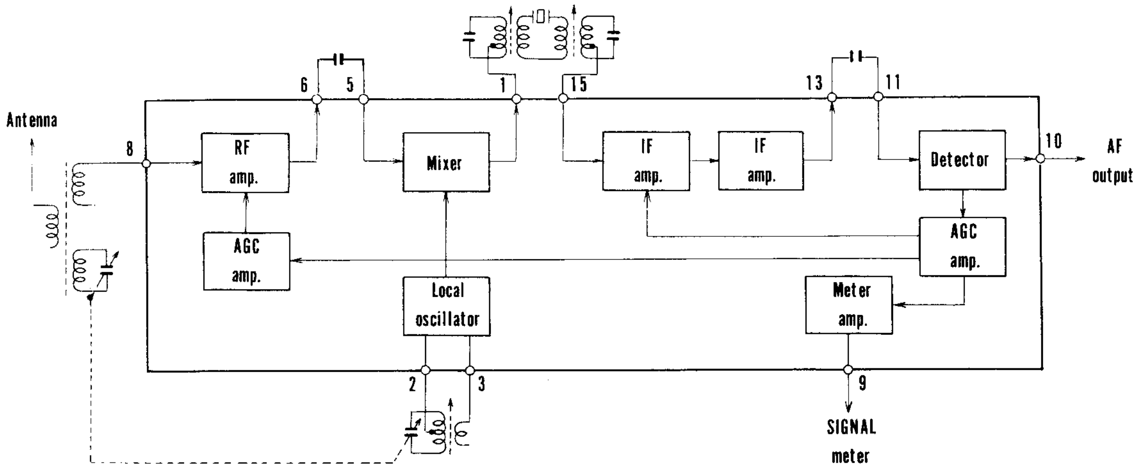

Antenna
8
RF amp.
AGC amp.
6
5
Mixer
1
15
Local oscillator
2
3
IF amp.
IF amp.
13
11
Detector
10
AF output
AGC amp.
Meter amp.
9
SIGNAL meter

Fig. 1 Block Diagram of HA1138

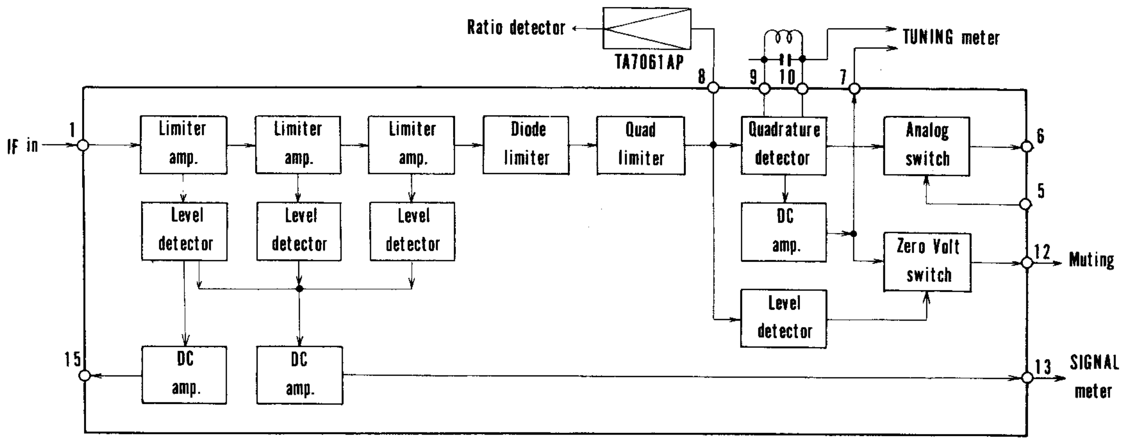

Ratio detector
TA7061AP
8
9
10
7
TUNING meter
IF in
1
Limiter amp.
Limiter amp.
Limiter amp.
Diode limiter
Quad limiter
Quadrature detector
Analog switch
6
5
Level detector
Level detector
Level detector
DC amp.
Zero Volt switch
12
Muting
Level detector
15
DC amp.
DC amp.
13
SIGNAL meter

Fig. 2 Block Diagram of HA1137

Multiplex Decoder

Demodulation is performed by switching detection. A single IC (HA1196) composes the circuit, which is divided into 3 sections. Fig. 3 shows the HA1196 block diagram (see circuit diagram on page 65).

1. **Switching signal generator**

   A PPL (phase locked loop) system is employed. 76kHz is generated by a VCO (voltage controlled oscillator: oscillator in which the frequency is varied by a control voltage) and converted into 19kHz by a frequency divider. This signal and the pilot (19kHz) of the received signal are applied to a phase comparator, which converts the phase differences of the two signals into a voltage. The voltage is then fed back to the VCO. The oscillator signal phase becomes locked to the pilot signal by this loop (PLL) and a 38kHz signal synchronised to the pilot signal is obtained and employed as the switching signal.

2. **Automatic stereo detector**

   With the PLL locked to the pilot signal, the pilot signal and a 19kHz signal of the same phase are produced. A voltage is then obtained at the phase comparator that is proportional to the pilot signal amplitude. As it increases, the lamp lights and the switch becomes on. The switching signal is applied to the demodulator.

3. **Demodulator**

   This is a switching circuit employing two differential amplifiers (Fig. 4). Q1 and Q2 are alternately switched on and off by the switching signal. The composite signal is amplified at Q3, switched and demodulated. Q6 and Q3 are loosely coupled at their emitters by R1 — R3. Q6 is driven in reverse phase to Q3. This is switched at Q4 and Q5, and by composing with Q1 and Q2 at the collector, crosstalk becomes cancelled.

   Adequate current flow is required to Q3 and Q6 to improve distortion figures at this point. However, if the base bias voltage is raised, the voltage component at the collector becomes reduced and clipping occurs (power supply voltage is limited by IC voltage endurance). For this reason, current from an external source is inserted at Q3 and Q6 collectors to become I_1 and I_2. The same current amounts are obtained as I_3 and I_4 from the emitters. Q3 and Q6 therefore operate with adequate current, and distortion at this stage becomes remarkablly improved. A feedback amplifier amplifies the demodulated output.

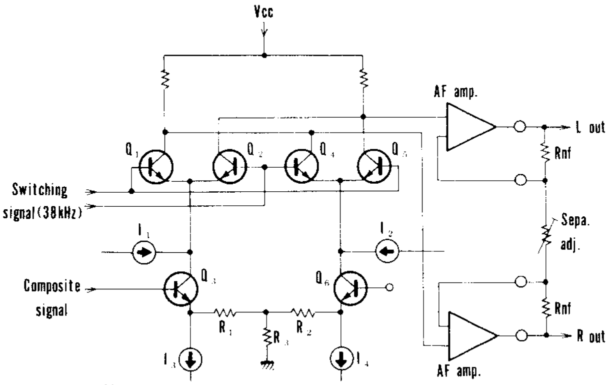

Vcc
AF amp.
L out
Rnf
Q1
Q2
Q4
Q5
Switching signal(38kHz)
I1
I2
Sepa. adj.
Composite signal
Q3
Q6
R1
R3
R2
I3
I4
Rnf
R out
AF amp.

Fig. 4 Equivalent Circuit of Demodulator

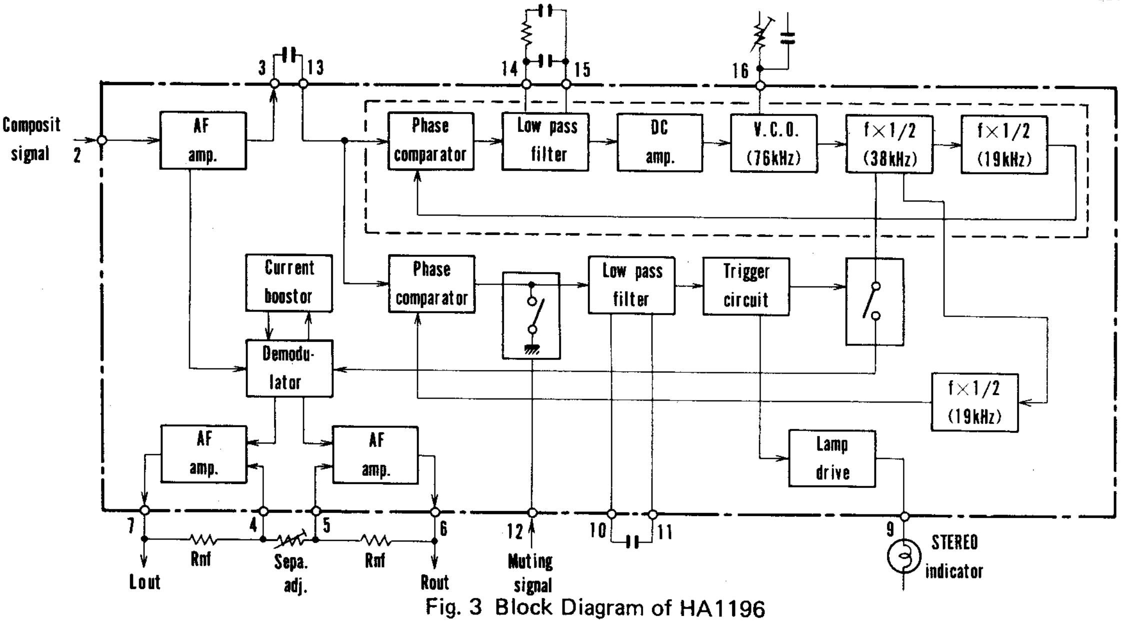

3
13
14
15
16
Composit signal 2
AF amp.
Phase comparator
Low pass filter
DC amp.
V.C.O. (76kHz)
f×1/2 (38kHz)
f×1/2 (19kHz)
Current boostor
Phase comparator
Low pass filter
Trigger circuit
Demodulator
f×1/2 (19kHz)
AF amp.
AF amp.
Lamp drive
7
4
5
6
12
10
11
9
Rnf
Sepa. adj.
Rnf
Lout
Rout
Muting signal
STEREO indicator

Fig. 3 Block Diagram of HA1196

5.3 FM MUTING CIRCUIT

At time of detuning (more than ± 70kHz) and with an antenna input of less than 10dB (0dB = 1μV), a DC voltage is produced at pin 12 of IC_1 (HA1137). This voltage is employed as the muting trigger.
With the MUTING switch ON, Q1 becomes ON and Q2 OFF in the Q1—Q2 Schmitt circuit as the muting trigger is produced. Q3 becomes ON when Q2 is OFF, and Q4, Q5 and Q6 also become ON. With Q4 & Q5 ON, the FM output becomes grounded, while IC_1 output is grounded by Q6 to apply muting.

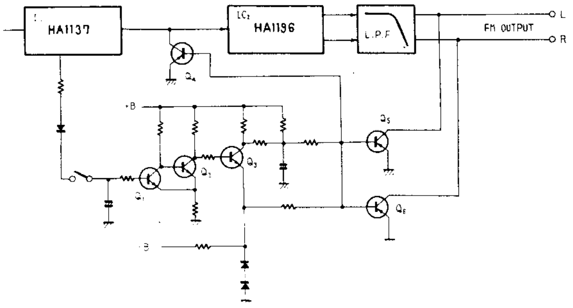

HA1137
IC2
HA1136
L.P.F
FM OUTPUT
L
R
Q4
+B
Q5
Q1
Q2
Q3
Q6
B

Fig. 5 FM Muting Circuit

5.4 PHONO EQUALIZER AMPLIFIER

IC (TA7136P1) is used with independent left and right channels. Grade G styrole capacitors and grade F metal film resistors comprise the equalizer elements, leading to an RIAA deviation within 0.2dB from 30Hz to 15kHz.

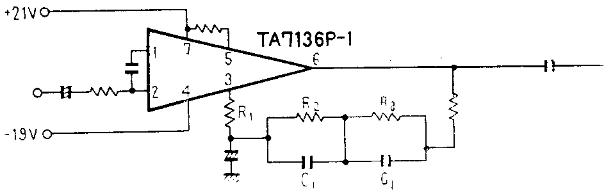

+21V
TA7136P-1
1
7
5
6
2
4
3
R1
R2
R3
C1
C1
-19V

Fig. 6

5.5 MICROPHONE CIRCUIT

A 2 stage transistor amplifier (monophonic) is provided in addition to the phono equalizer amplifier. A selector switch cuts the AUX jack input when a plug is inserted into the MIC jack. The amplified microphone signal is then supplied to both the left and right channels. The FUNCTION switch is set to the AUX position when using a microphone.

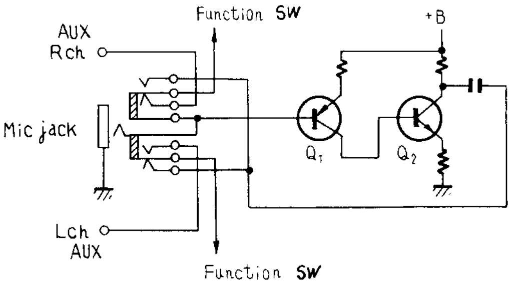

Function SW
+B
AUX
Rch
Mic jack
Q1
Q2
Lch
AUX
Function SW

Fig. 7

5.6 TONE CONTROL

CR type tone controls are connected to an extremely low output impedance flat amplifier (IC = TA7136, 31dB gain). Bass can be varied in the range of +8dB ~ −7dB (100Hz) and treble in the range of +9dB ~ −7dB (10kHz). A TONE switch also allows the tone controls to be switch ON/OFF.
R1 and R2 are designed to provide the same loss when the TONE switch is OFF as obtained with the TONE switch ON and the BASS and TREBLE controls at center positions (flat). Frequency response thus becomes flat when the TONE switch is set to OFF.
R3, and C1 form a 6kHz 6dB/octave HIGH CUT filter which is connected following the TONE switch.

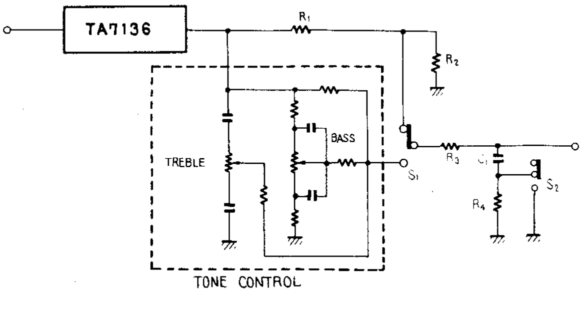

TA7136
R1
R2
BASS
TREBLE
S1
R3
C1
S2
R4
TONE CONTROL

Fig. 8

5.7 PROTECTION CIRCUIT

This protection circuit functions to protect the speakers and the power amplifiers from damage due to short-circuit of the load, etc., and performs a muting operation to cut noise and distortion which occur when switching the power on and off. The circuit is shown in Fig. 15, and consists of a bridge type over-current and overload detector, a differential amplifier DC voltage detector, and a power switch ON/OFF detector section.

Relay Driving Circuit

Q4—Q6, in Fig. 9, comprise the relay driving circuit.

In the normal condition reverse bias is applied to the base of Q4, and Q4 is in a off state. When one of the above mentioned detection circuits goes on, current flows through R11, the base potential falls and Q4 is turned on. Consequently Q5 comes on and Q6 goes off. When Q6 goes off, the current of the relay circuit is cut, to release the switch of the output circuit.

When the power switch is turned on, a delay operation occurs in this circuit. R17 and C3, in the base circuit of Q6, are the time constant elements which determine the delay time. When the power switch is turned on, C3 charges to a potential of +60 volts through R17 and R18, and Q6 is kept in the off state during this time. When the power source is switched off, the muting operation of Q5 prevents shock noise. In the normal condition, the potentials of +33 volts and −5.1 volts are applied to Q5 through R14 and R15. The resultant potential at the base of Q5 is −1 volt in the cutout condition. When the power supply is turned off, of −5.1 volts disappears immediately due to the small time constant of the power circuit. Thus a positive base potential remains, switching Q5 on, which in turn switches off Q6 and hence the relay.

Detection of DC Voltage

This is a differential amplifier consisting of Q2 and Q3, as shown in Fig. 10. The bases of Q2 and Q3 are connected to the center points of the right and the left power amplifiers. When the DC balance of the power stage is lost for some reason, a potential difference is produced in the input signal to the differential amplifier, and the collector currents of Q2 and Q3 are put out of balance. Thus, the relay driving circuit functions, and the relay switch is turned off.

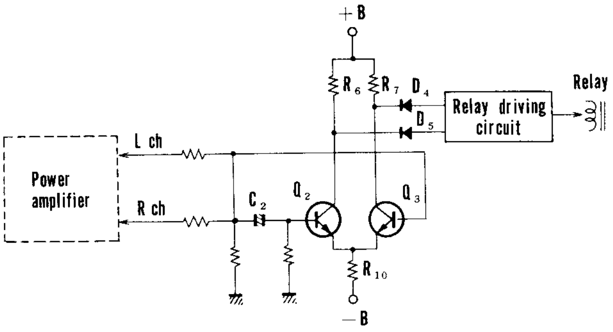

+B
R6
R7
D4
D5
Relay driving circuit
Relay
L ch
R ch
Power amplifier
C2
Q2
Q3
R10
−B

Fig. 10 DC Voltage Detection Circuit

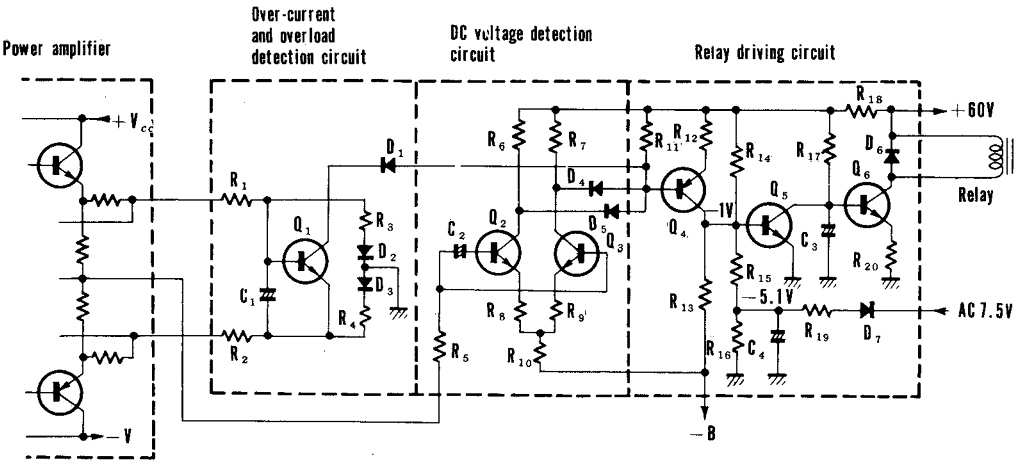

Power amplifier
Over-current and overload detection circuit
DC voltage detection circuit
Relay driving circuit
+Vcc
−V
R1
R2
D1
Q1
R3
D2
D3
C1
R4
R6
R7
C2
Q2
D4
D5
Q3
R8
R9
R5
R10
R11
R12
Q4
−1V
R13
R16
C4
R14
R15
−5.1V
Q5
C3
R17
R18
+60V
D6
Q6
R20
Relay
R19
D7
AC 7.5V
−B

Fig. 9 Protection Circuit

Over-current and Overload Detection

The equivalent circuit of this detector section is shown in Fig. 11, and Fig. 12-a shows the equivalent circuit at the time of a positive half cycle. When this equivalent circuit is overloaded, the balance of the bridge, formed by RE1, R1, R3 and RL, is disturbed, and a potential is produced between b and a in such a direction that Q1 is turned on. When Q1 is turned on, the collector current increases, the relay driving circuit functions and the relay switch of the output circuit is turned off.

After the cause of the overload is removed, the bias of Q1 is reduced and the relay switch turns on to automatically restore normal operation, Fig. 18-b shows the equivalent circuit at the time of a negative half cycle. In this circuit, a potential is produced between b and e as above, and Q1 is turned on.

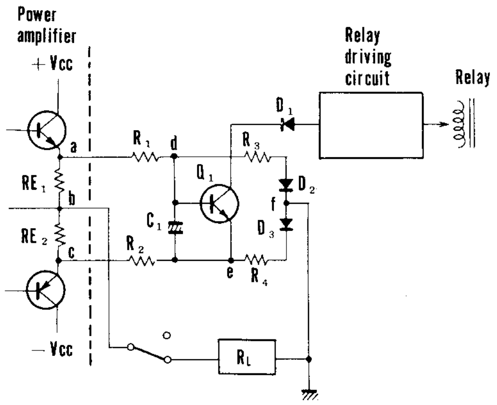


Fig. 11 Over-current and Overload Detection Circuit

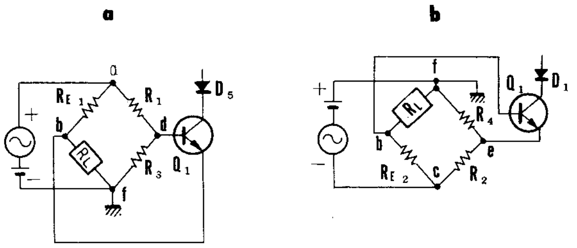


Fig. 12 Equivalent Circuit of

5.8 POWER AMPLIFIER CIRCUIT

Composed of differential first stage, all stages direct coupled pure complementary OCL circuit. Open gain at 1kHz is approximately 80dB and NFB amount is approximately 50dB. R3 and R4 are provided with this circuit in order to obtain adequate stability even with the NFB disconnected. Q1 form a differential amplifier: 100% d.c. feedback is applied from the junction point of the power stage to the base of Q1 so the potential of the junction point is always maintained at the same level.

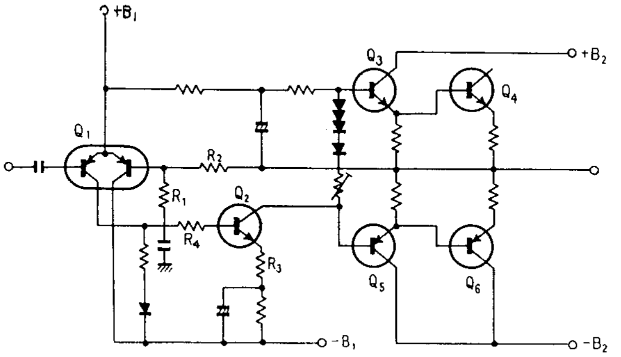


Fig. 13

5.9 POWER SUPPLY

Two windings are provided in the power transformer secondary and each is separately bridge rectified. One of these is sent as ±48 VDC to the voltage stabilizer circuit to become 13V, 33V and −37V regulated voltages for supply to each assembly.

The other secondary voltage is bridge rectified and becomes ±4IV or supply to the power amplifier predriver stage. Extremely low power supply impedance is maintained by a 15,000μF electrolytic capacitor.

6. ADJUSTMENTS

6.1. AM SECTION

1. Set function switch to AM.
2. Connect AM signal generator through 1k-ohm resistor to AM antenna terminal.
3. Set DUPLICATE switch to OFF and connect an AC voltmeter to TAPE 1 REC jacks.
4. Set AM SG for 400Hz 30% modulation 74dB output.
5. Set SX-750 dial indication and AM SG frequency for 600kHz.
6. Adjust T8 core for maximum reading on AC voltmeter.
7. Set SX-750 dial indication and AM SG frequency for 1,400kHz.
8. Adjust TC2 for maximum reading on AC voltmeter.
9. Set AM SG for 30dB output.
10. Set SX-750 dial indication and AM SG frequency for 600kHz.
11. Adjust T8 and bar antenna core for maximum reading on AC voltmeter.
12. Set SX-750 dial indication and AM SG frequency for 1,400kHz.
13. Adjust TC2, TC4 for maximum reading on AC voltmeter.
14. Repeat steps 10~13 to eliminate variations in AC voltmeter readings.

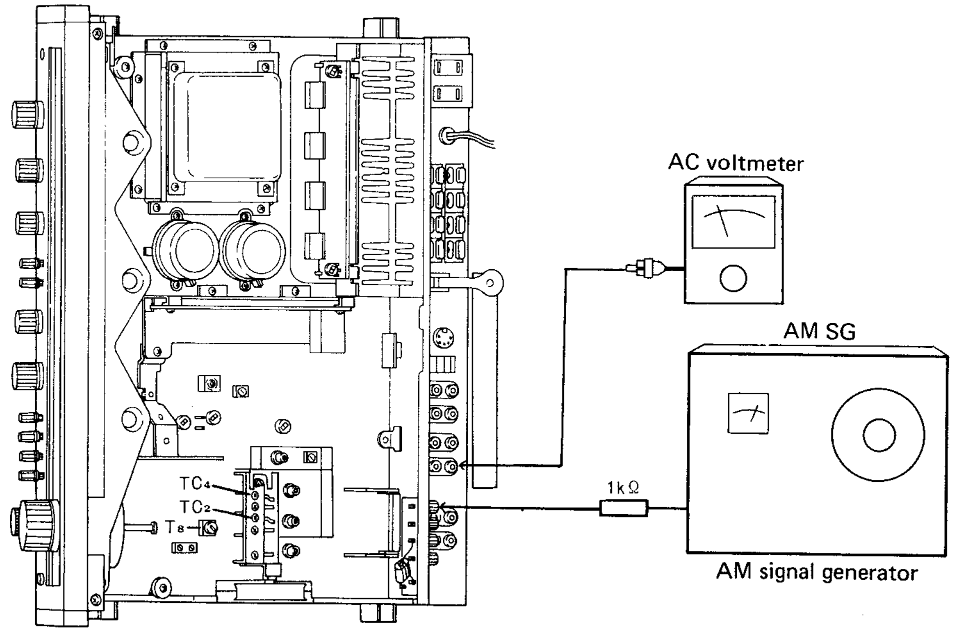


Fig. 14

6.2 FM SECTION

FM Tracking

1. Connect measuring equipment as shown in Fig. 15.
2. Set FM SG to 100% modulation (±75kHz deviation) at 400Hz and 100dB output.
3. On SX-750 front panel, set FM switch to ON, FM muting to OFF and VOLUME control to minimum position.
4. Set TC6 to center of turning range.
5. Tune FM SG and SX-750 to dial readings of 90MHz.
6. Adjust T4 core for maximum indication on Signal meter.
7. Adjust T6 core for center of scale indication on Tuning meter.
8. Set FM SG output to 8~ 10dB and adjust cores of T1, T2, and T3 for maximum indication on Signal meter.
9. Tune FM SG and SX-750 to dial readings of 106MHz.
10. Set FM SG output to 100dB and adjust TC6 for maximum indication on Signal meter.
11. Set FM SG output to 8~10dB and adjust TC1, TC3, TC5 and TC6 for maximum indication on Signal meter.
12. Repeat above adjustment steps 5~11 and adjust for optimum conditions.
13. Tune FM SG and SX-750 to dial readings of 90MHz.
14. Adjust T5 core for maximum indication on Signal meter.
15. Detune SX-750 (to noise only).
16. Adjust T6 for center of scale indication on Tuning meter.
17. Tune FM SG and SX-750 to dial readings of 98MHz.
18. Set FM SG output to 60dB and adjust upper core of T7 for maximum reading on AC voltmeter.
19. Adjust lower core of T7 for minimum audio frequency output distortion.
20. Set FM SG for 100dB output and adjust VR1 so that Signal meter indicates 5 of the scale.

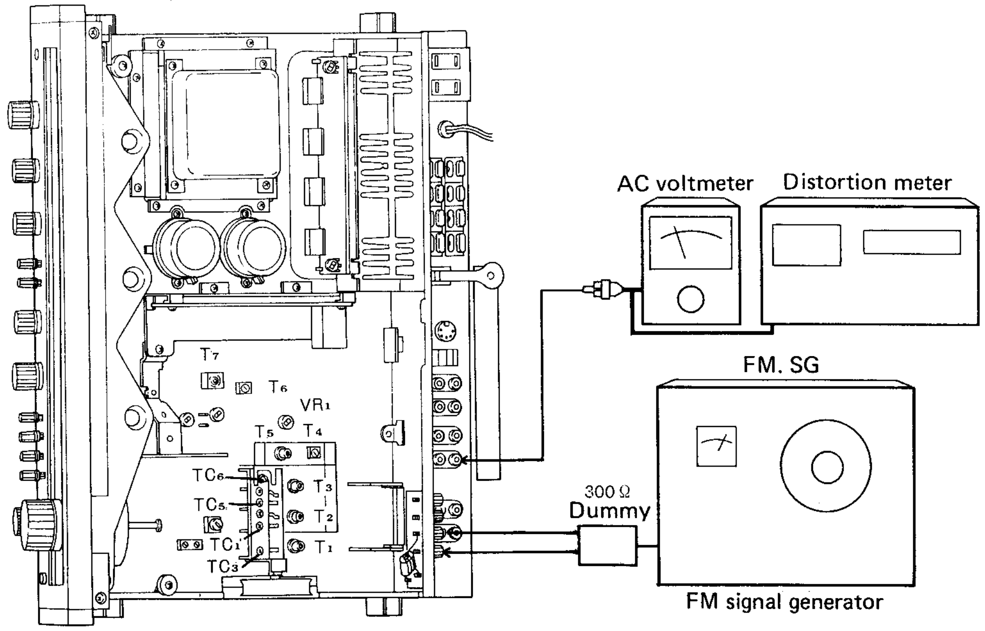


Fig. 15

6.3 MPX Adjustment

1. Connect measuring equipment as shown in Fig. 16.
2. Tune FM SG and SX-750 to dial readings of 98MHz.
3. Set FM SG for 60dB unmodulated output.
4. Connect the output signal (19kHz) of MPX SG PILOT OUT terminal to the horizontal input of an oscilloscope, and pin 20 of the tuner assembly (AWE-073) via a probe to the oscilloscope vertical input.
5. Adjust VR2 so that lissajous pattern displayed on oscilloscope becomes stationary (Fig. 16).
6. Set MPX SG to 67.5kHz deviation at 1kHz for left and right channels, and to 7.5kHz deviation for 19kHz pilot signal.
7. Adjust T5 core for minimum audio frequency distortion. Take care to turn core only within ±180°.
8. Adjust VR3 for minimum signal leakage from R channel to L channel, and from L channel to R channel.

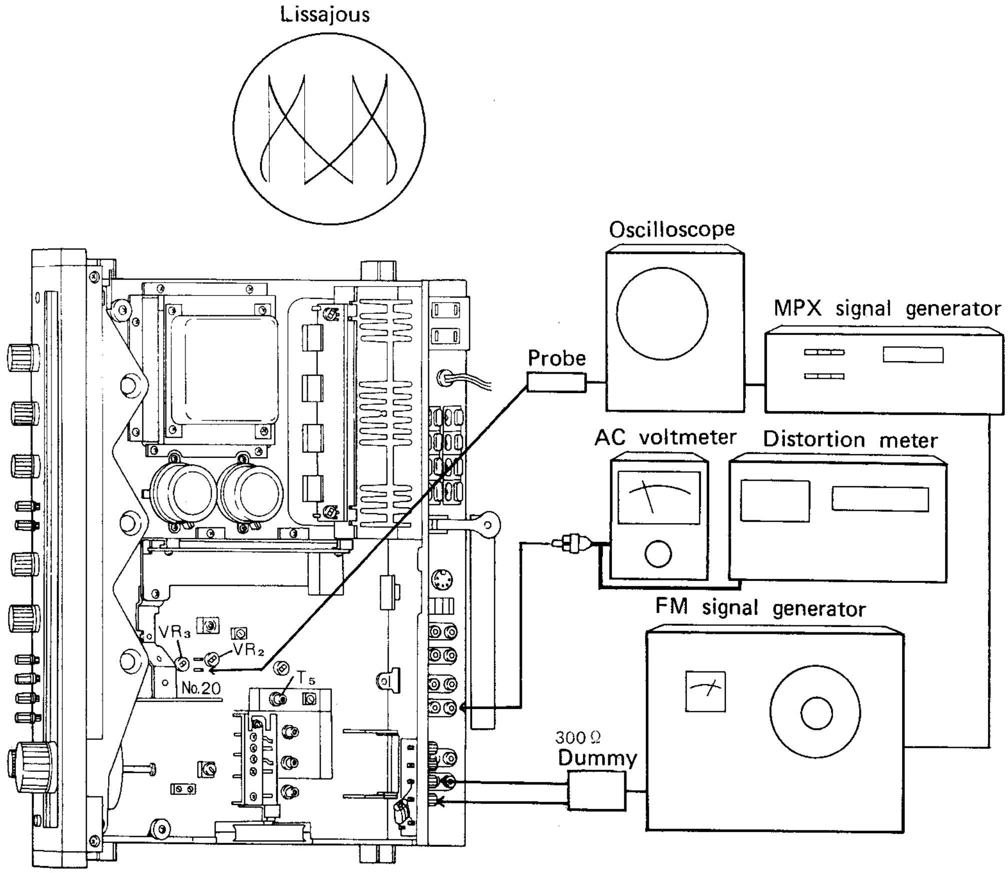

Lissajous
Oscilloscope
MPX signal generator
Probe
AC voltmeter
Distortion meter
FM signal generator
300 Ω
Dummy
VR3
VR2
No.20
T5

Fig. 16

6.4 POWER AMPLIFIER SECTION

Idle Current Adjustment

1. Connect DC voltmeter as shown in Fig. 17.
2. Do not connect load to speaker terminals. Set VOLUME control to minimum (fully counter-clockwise).
3. Turn VR1 and VR2 (shown in Fig. 17) fully counter-clockwise, then set POWER switch to ON.
4. 1~ 2 minutes after turning on the power, adjust VR3 (L channel) and VR4 (R channel) for 50mV indication on DC voltmeter.
5. 20 minutes after turning on the power, again adjust VR1 and VR2 for 30mV indication on DC voltmeter.

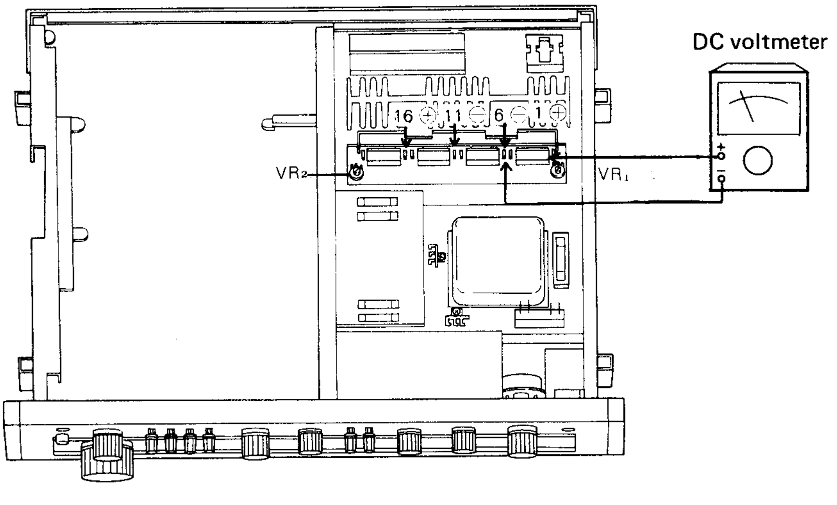


Fig. 17

7. DIAL CORD STRINGING

1. Remove the wooden cover and the front panel.
2. Turn tuning drum fully clockwise (as viewed from X direction in Fig. 18).
3. Tie one end of cord to stud on inner section of tuning drum (more easily performed by loosening setscrew and temporarily removing tuning drum from shaft).
4. Route cord through tuning drum cutout, make a half turn around the drum, then route in sequence to pulley A—dial pointer—pulley B—pulley C.
5. Wind cord 3 turns clockwise (as viewed from rear panel) around tuning shaft, then route to pulley D.
6. Wind cord two turns around tuning drum and tie to spring hook so that tension is applied to the cord.
7. Turn TUNING knob and confirm normal cord motion, then trim off excess cord.
8. With tuning drum at step 1 setting, restrain cord from moving and slip dial pointer on cord. Align it with the starting point (extreme left end of frequency scale).

Dial Pointer Installation Caution

Metal portion of dial pointer is plated. If this section is touched directly by hand or fingerprints and other impurities, it is difficult to remove dirt from aventurine finish. As this is not desirable in terms of both appearance and anticorrosion, take extreme care not to touch the metal section when handling the dial pointer.

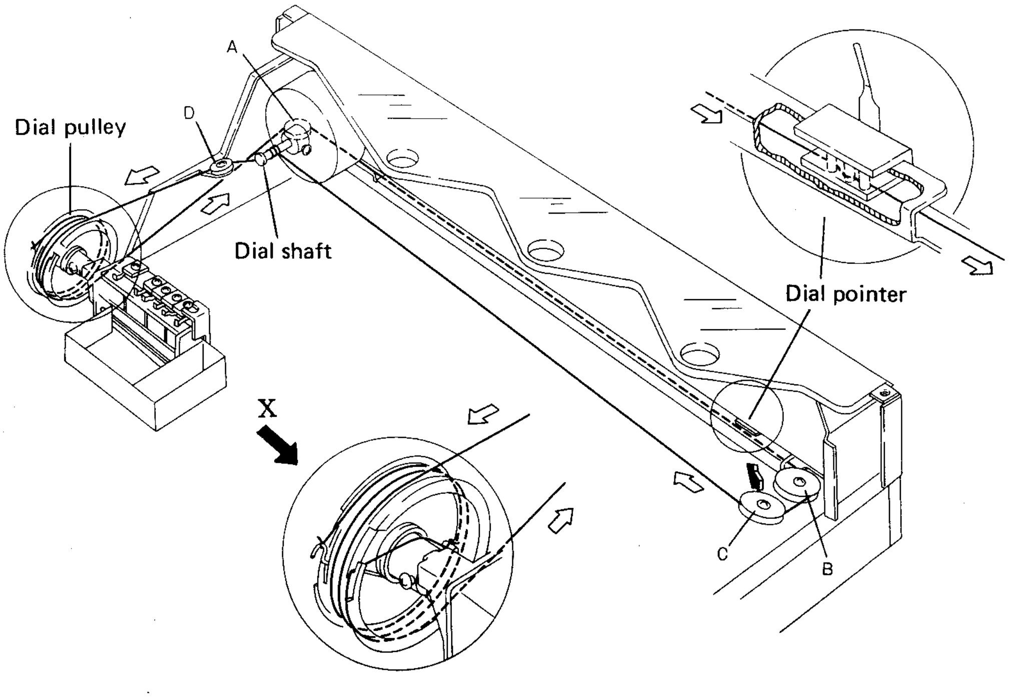
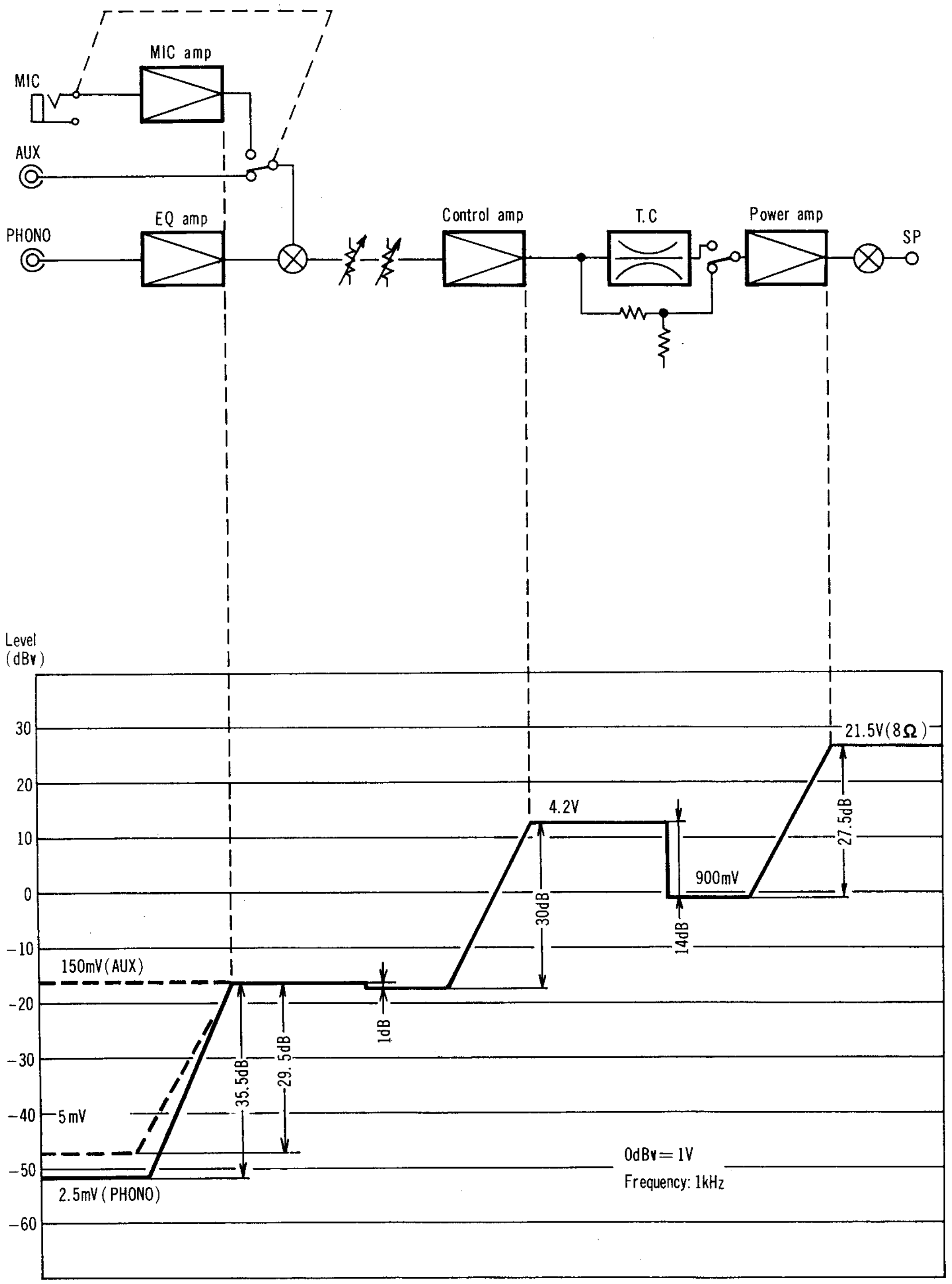


Fig. 18

8. LEVEL DIAGRAM



9. DISASSEMBLY

Top Cover (Fig. 19)

Take out 2 screws each at left and right (total 4 screws) to remove.

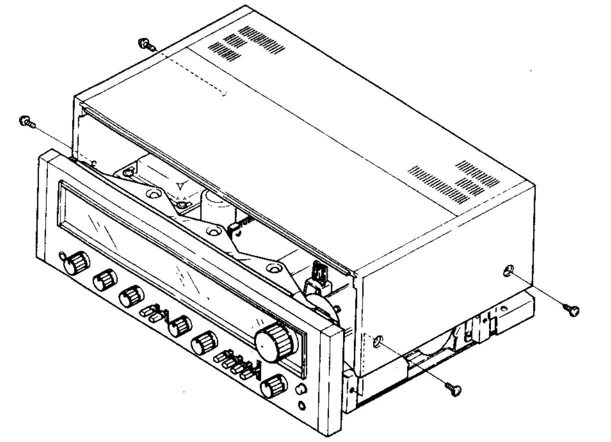


Fig. 19

Bottom Plate (Fig. 20)

Take out screws ①~⑪ to remove.

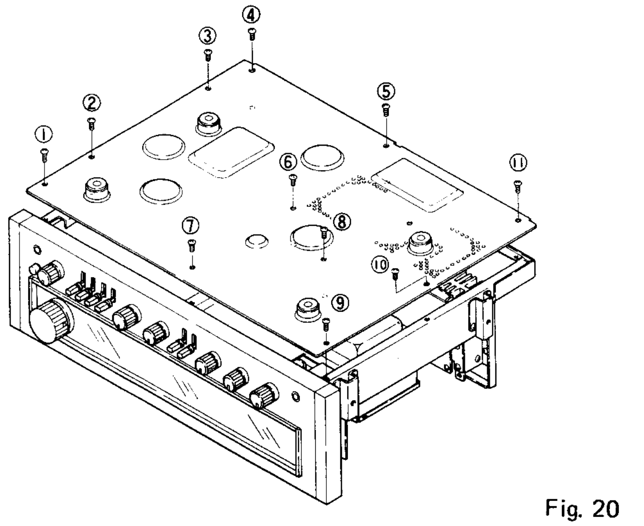


Fig. 20

Front Panel (Fig. 21)

Pull off all knobs and remove shaft nuts of SPEAKERS and FUNCTION switches. Front panel can then be removed by taking out screws ⑫ & ⑬.

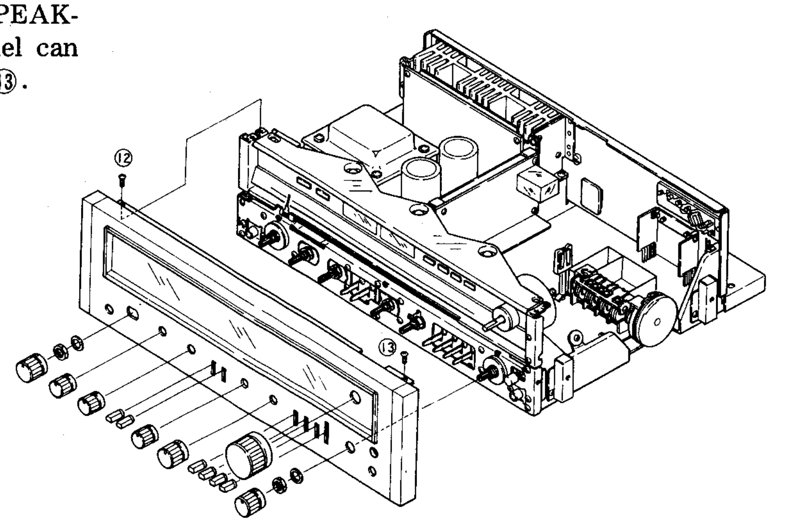
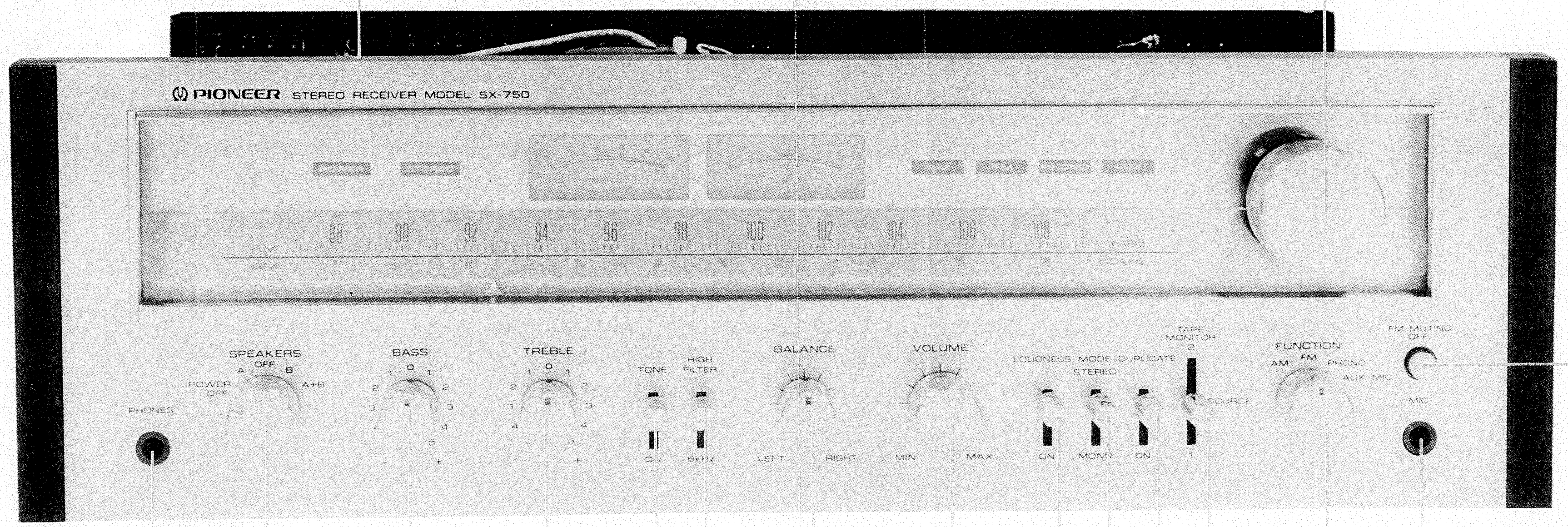


Fig. 21

10. PARTS LOCATION

10.1 FRONT PANEL VIEW


PIONEER STEREO RECEIVER MODEL SX-750
POWER
STEREO
AM
FM
PHONO
AUX
88
90
92
94
96
98
100
102
104
106
108
MHz
kHz
PHONES
SPEAKERS
OFF
A
B
A+B
POWER OFF
BASS
TREBLE
TONE
HIGH FILTER
BALANCE
LEFT
RIGHT
VOLUME
MIN
MAX
LOUDNESS
MODE
DUPLICATE
STEREO
MONO
ON
TAPE MONITOR
2
1
SOURCE
FUNCTION
AM
FM
PHONO
AUX
MIC
FM MUTING
OFF
MIC

Front panel assembly
ANB-421

Knob (TUNING)
AAA-036

Knob (FM MUTING)
AAD-112

Phone jack (Head phone)
AKN-010

Knob (SPEAKERS)
AAB-100

Knob (BASS)
AAB-099

Knob (TREBLE)
AAB-099

Knob (TONE)
AAD-013

Knob (HIGH FILTER)
AAD-013

Knob (BALANCE)
AAB-099

Phone jack (MIC)
AKN-013

Knob (FUNCTION)
AAB-100

Knob (TAPE MONITOR)
AAD-013

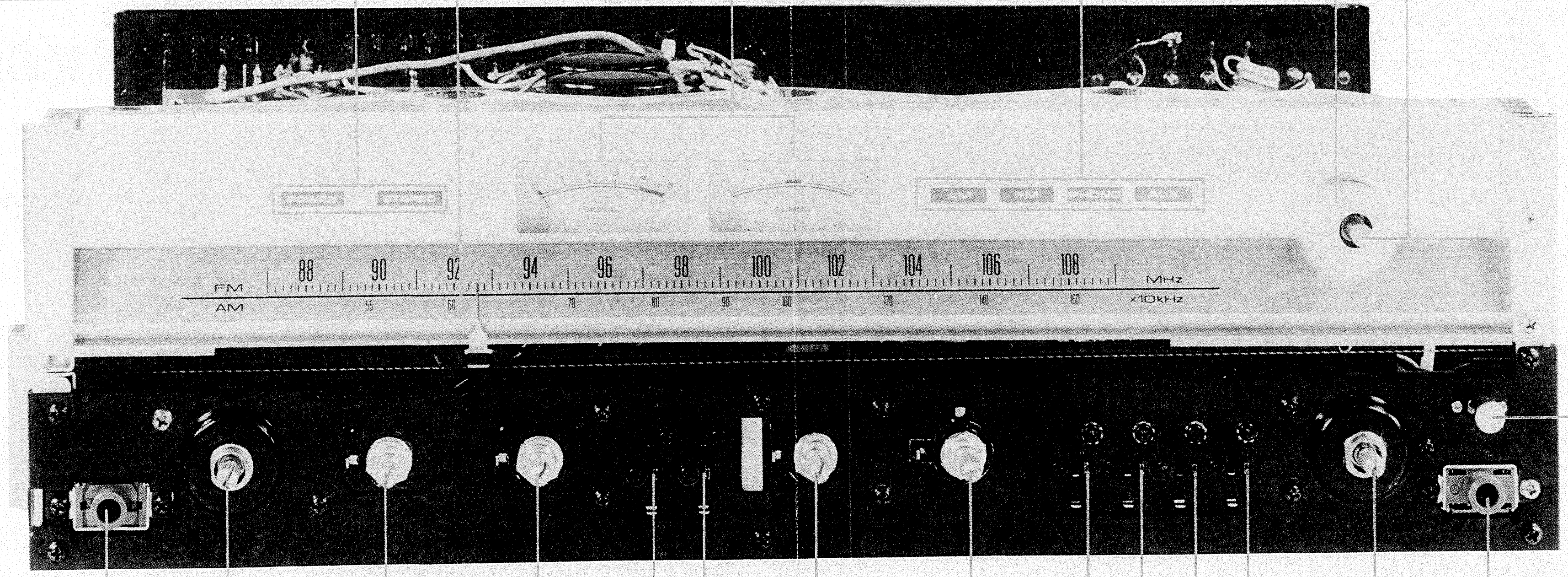
Knob (DUPLICATE)
AAD-013

Knob (MODE)
AAD-013

Knob (LOUDNESS)
AAD-013

Knob (VOLUME)
AAB-100

10.2 FRONT PANEL VIEW (with removed Front panel)


STEREO
DIGITAL
TUNING
AM
FM
PHONO
AUX
88
90
92
94
96
98
100
102
104
106
108
MHz
FM
AM
x10kHz

INDICATOR (AM, FM, PHONO, AUX)
AEC-255

Double meter
AAW-040

Shaft cover
AEC-254

Dial pointer assembly
AAF-048

Tuning shaft assembly
AXA-124

INDICATOR
AEC-241 (POWER, STEREO)

Knob (FM MUTING)
AAD-112

Phone jack (Headphones)
AKN-010

Rotary switch (SPEAKERS)
ASA-038

Lever switch (TONE)
ASK-090

Lever switch (HIGH FILTER)
ASK-090

Variable resistor (BASS)
ACV-138

Variable resistor (TREBLE)
ACV-138

Variable resistor (BALANCE)
ACV-135

Phone jack (MIC)
AKN-013

Rotary switch (FUNCTION)
ASD-049

Lever switch (TAPE MONITOR)
ASK-102

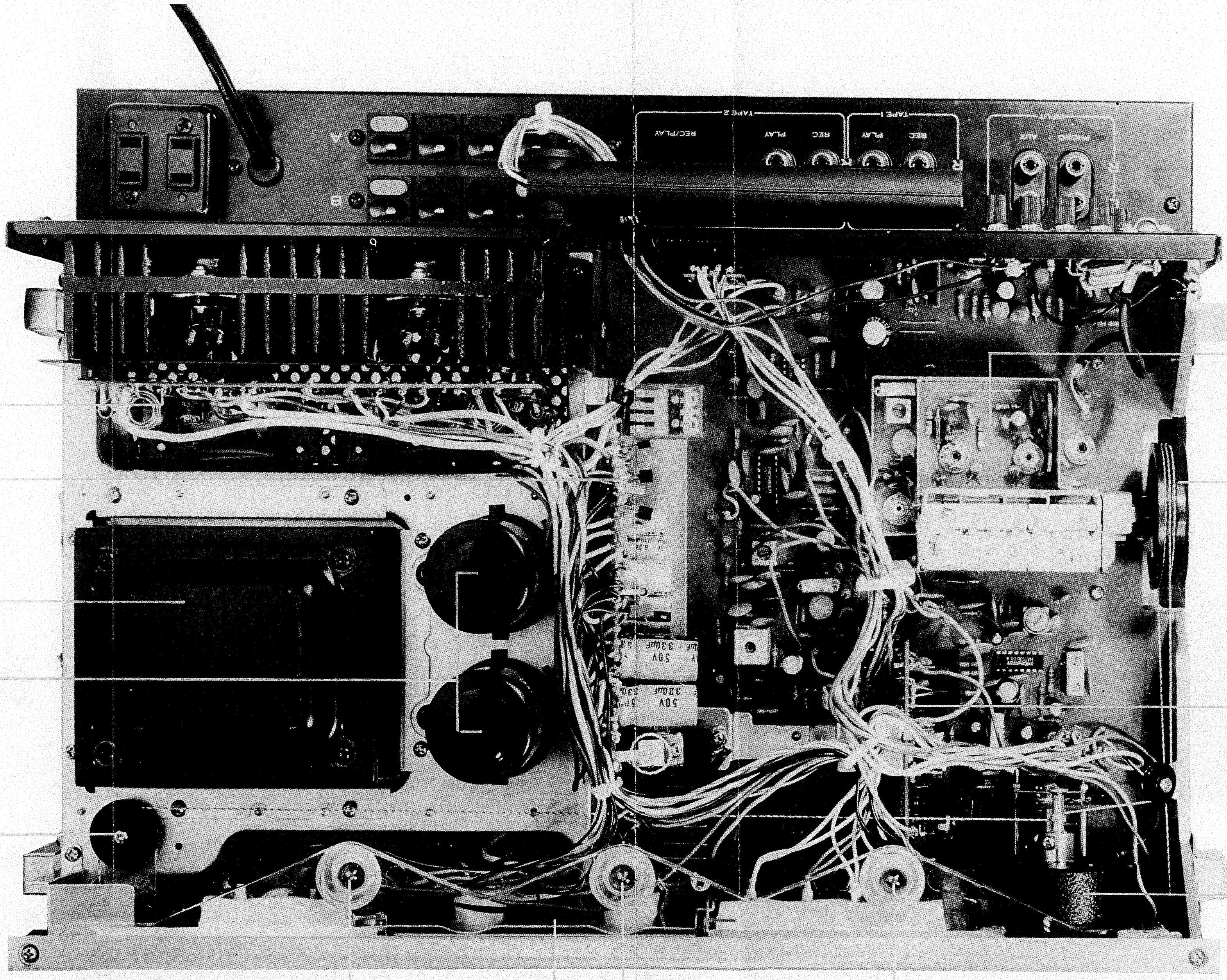
Lever switch (DUPLICATE)
ASK-092

Lever switch (MODE)
ASK-090

Lever switch (LOUDNESS)
ASK-090

Variable resistor (VOLUME)
ACV-179

10.3 TOP VIEW



Power amplifier assembly
AWH-046

Power supply & Protection assembly
AWR-099

Power transfomer
ATT-264 (KU model)
ATT-301 (KC model)

Electrolytic capacitor
ACH-057

Pully
AEC-153

Lamp assembly
AEL-060

Acrylic board
AEC-251

Lamp assembly
AEL-060

Lamp assembly
AEL-060

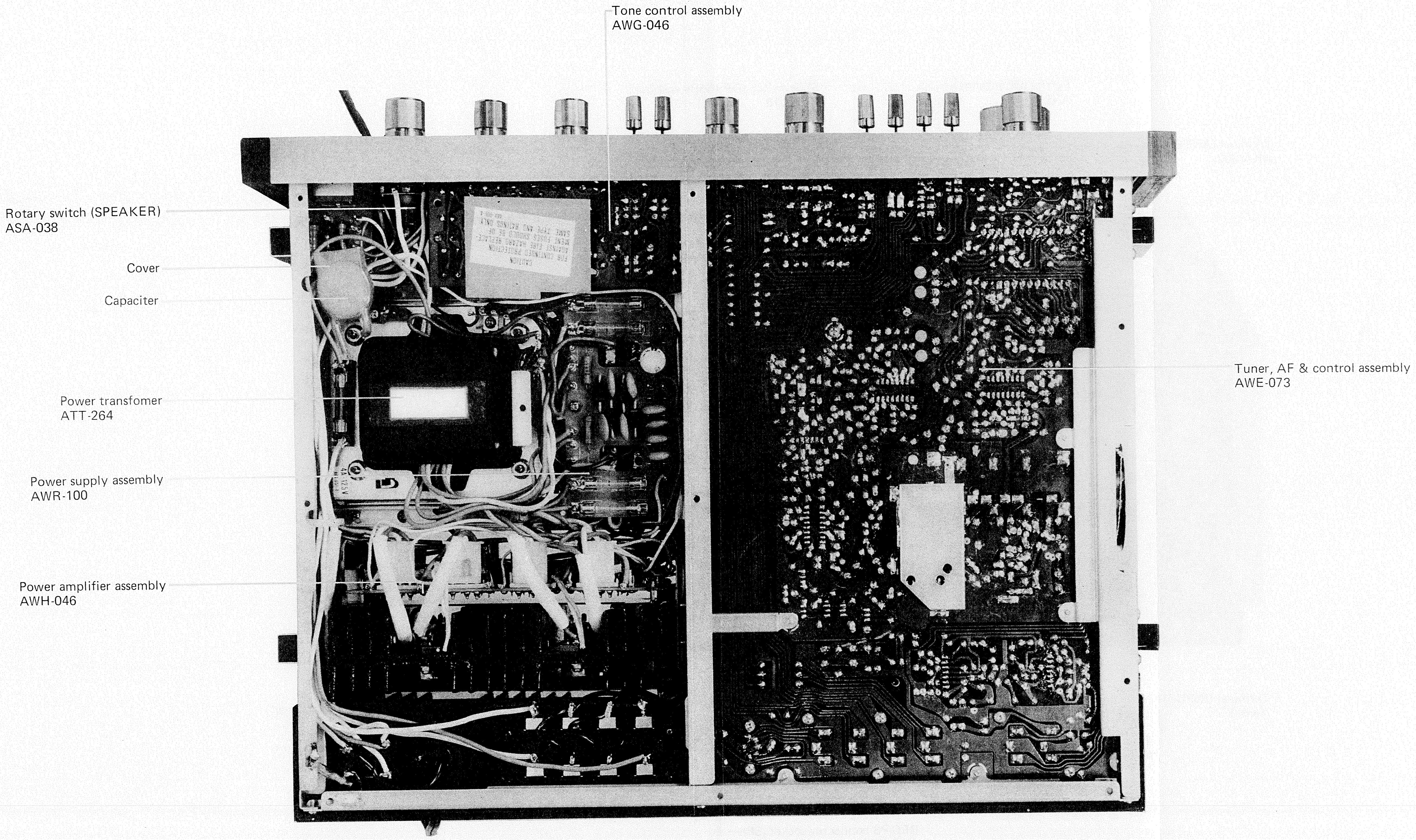
Tuner, AF, & control assembly
AWE-073

Tuning drum assembly
AXA-070

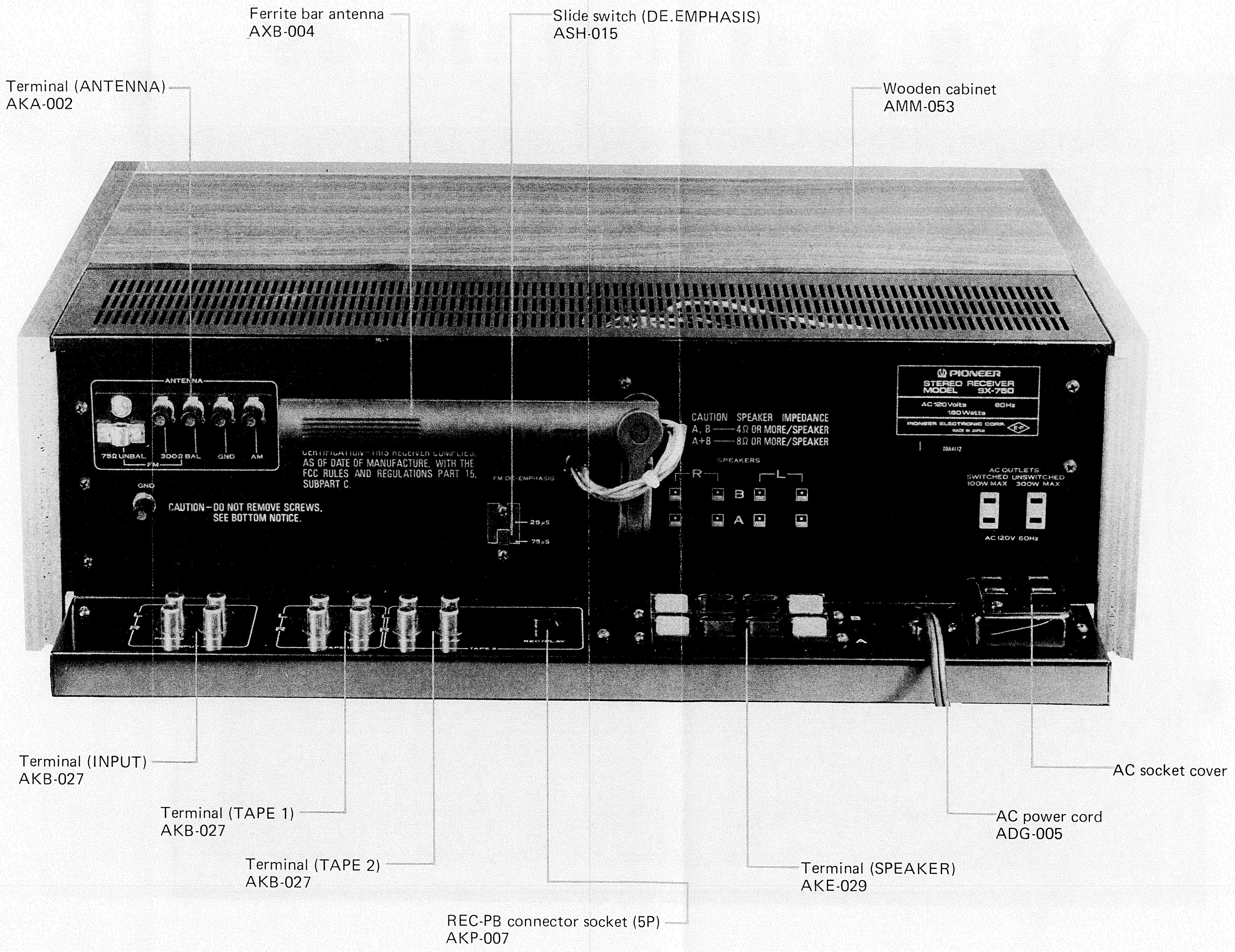
Filter & muting assembly
AWM-094

Tuning shaft assembly
AXA-124

10.4 BOTTOM

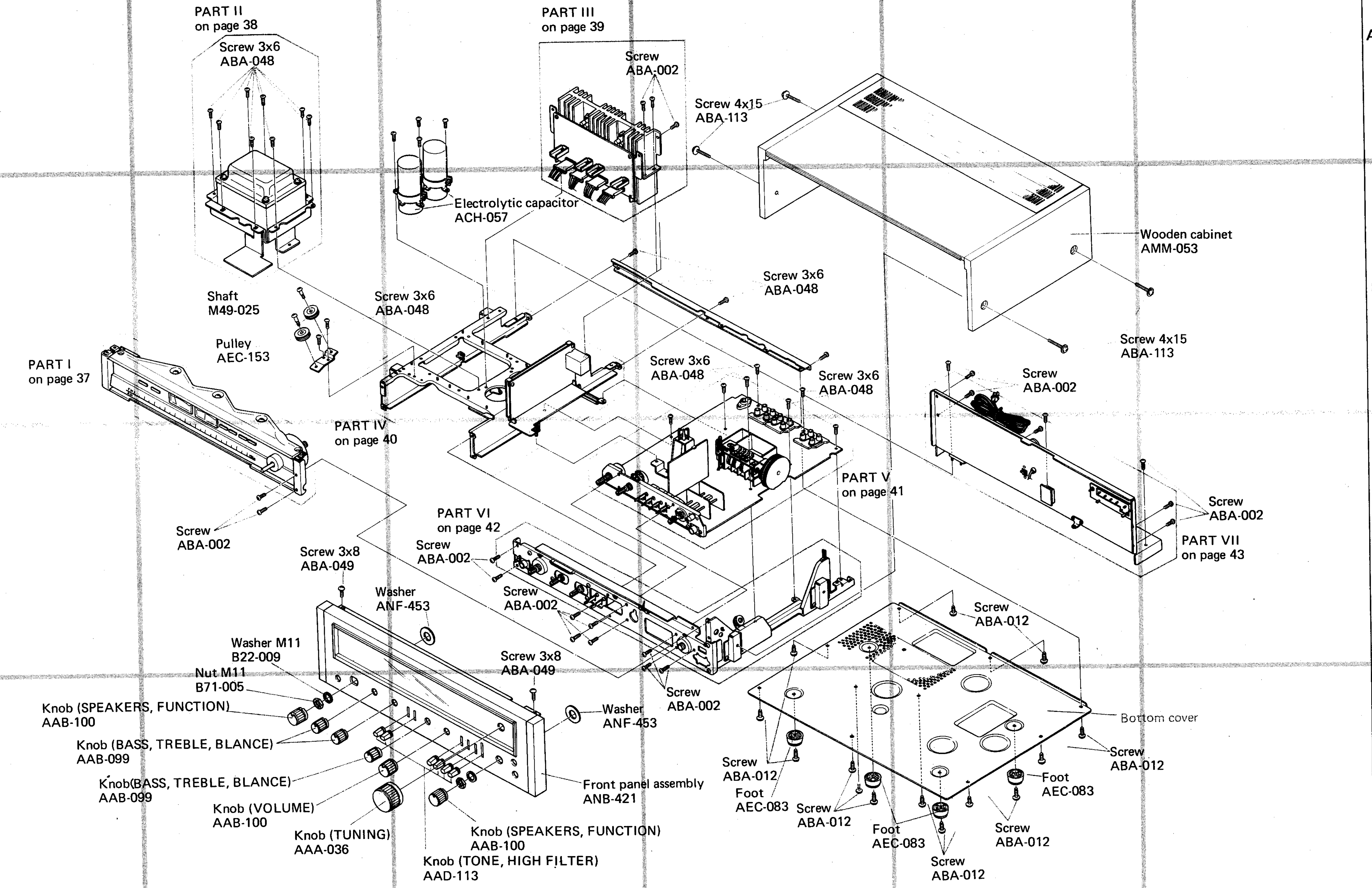

Tone control assembly
AWG-046
Rotary switch (SPEAKER)
ASA-038
Cover
Capaciter
Power transfomer
ATT-264
Power supply assembly
AWR-100
Power amplifier assembly
AWH-046
Tuner, AF & control assembly
AWE-073

10.5 REAR VIEW


Ferrite bar antenna
AXB-004
Slide switch (DE.EMPHASIS)
ASH-015
Terminal (ANTENNA)
AKA-002
Wooden cabinet
AMM-053
Terminal (INPUT)
AKB-027
Terminal (TAPE 1)
AKB-027
Terminal (TAPE 2)
AKB-027
REC-PB connector socket (5P)
AKP-007
Terminal (SPEAKER)
AKE-029
AC power cord
ADG-005
AC socket cover

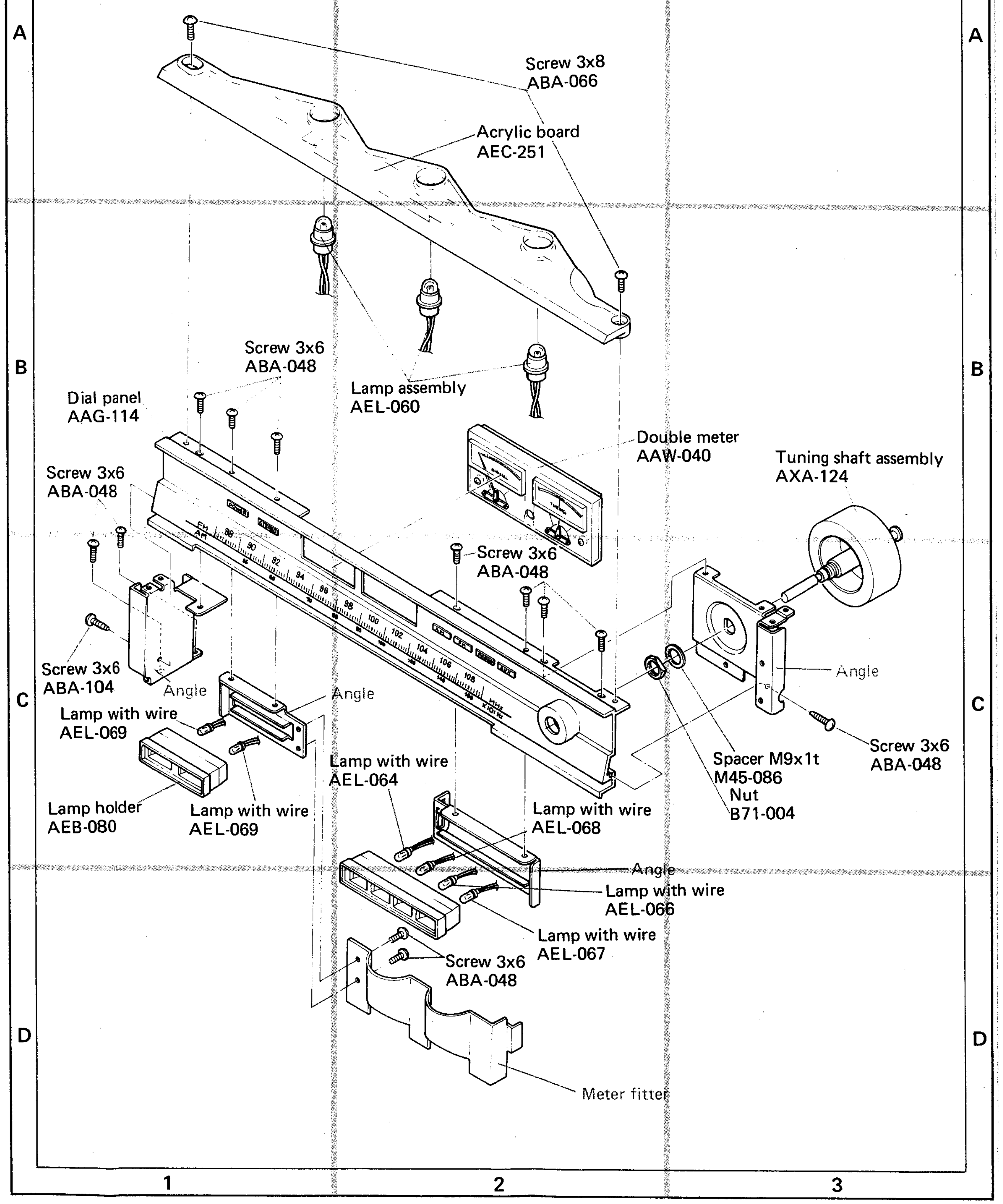
11.EXPLODED VIEW

NOTE:
Parts indicated in green type cannot be supplied.


1
2
3
4
5
6
A
B
C
D
PART II
on page 38
Screw 3x6
ABA-048
PART III
on page 39
Screw
ABA-002
Screw 4x15
ABA-113
Electrolytic capacitor
ACH-057
Wooden cabinet
AMM-053
Screw 3x6
ABA-048
Shaft
M49-025
Screw 3x6
ABA-048
Pulley
AEC-153
PART I
on page 37
Screw 4x15
ABA-113
Screw
ABA-002
Screw 3x6
ABA-048
Screw 3x6
ABA-048
PART IV
on page 40
PART V
on page 41
Screw
ABA-002
Screw
ABA-002
PART VII
on page 43
PART VI
on page 42
Screw
ABA-002
Screw 3x8
ABA-049
Washer
ANF-453
Screw
ABA-002
Screw
ABA-012
Washer M11
B22-009
Nut M11
B71-005
Screw 3x8
ABA-049
Screw
ABA-002
Knob (SPEAKERS, FUNCTION)
AAB-100
Washer
ANF-453
Bottom cover
Knob (BASS, TREBLE, BLANCE)
AAB-099
Screw
ABA-012
Knob(BASS, TREBLE, BLANCE)
AAB-099
Screw
ABA-012
Foot
AEC-083
Front panel assembly
ANB-421
Foot
AEC-083
Screw
ABA-012
Knob (VOLUME)
AAB-100
Foot
AEC-083
Screw
ABA-012
Knob (TUNING)
AAA-036
Knob (SPEAKERS, FUNCTION)
AAB-100
Screw
ABA-012
Knob (TONE, HIGH FILTER)
AAD-113

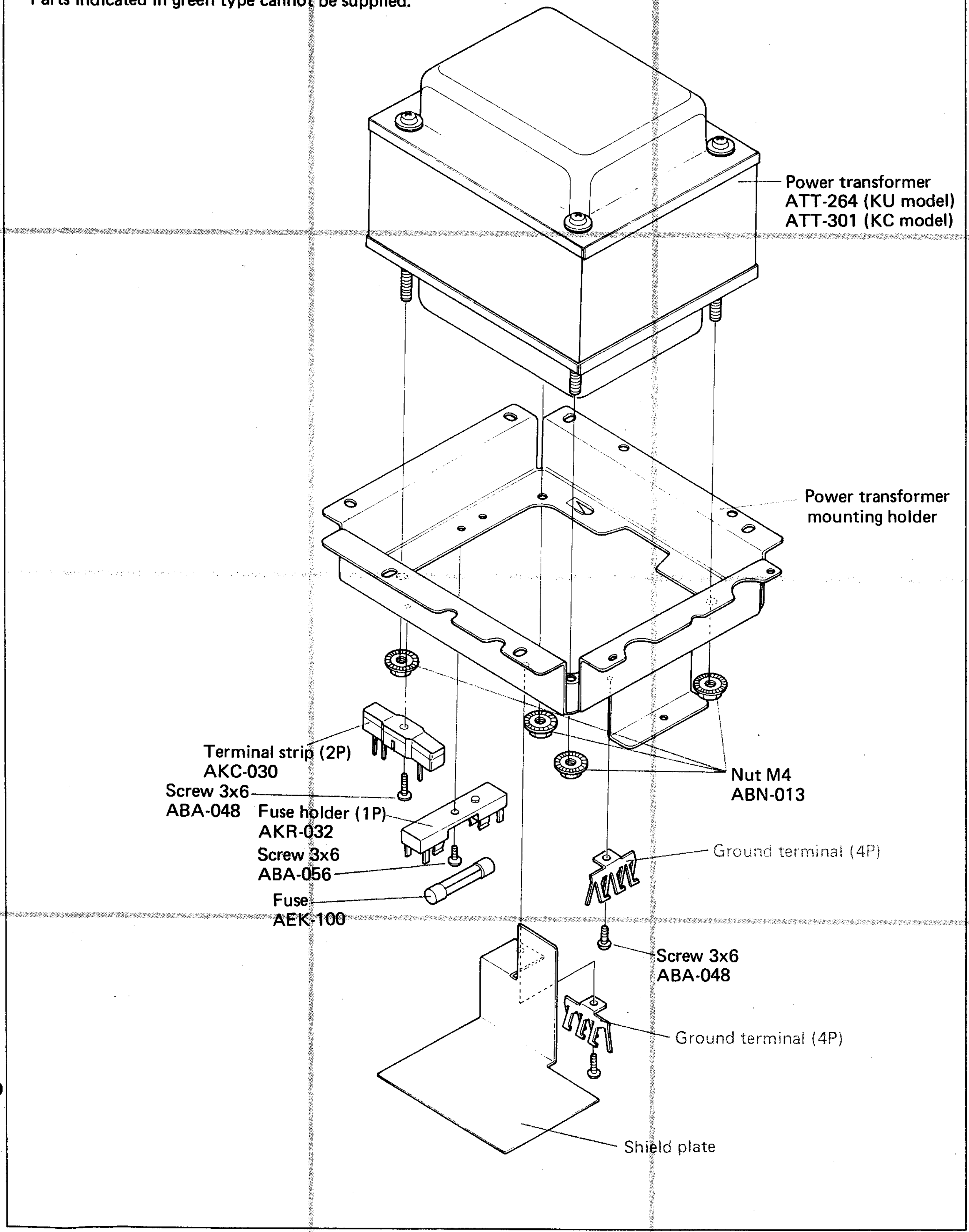
11.1 PART I

NOTE:
Parts indicated in green type cannot be supplied.


Screw 3x8
ABA-066
Acrylic board
AEC-251
Screw 3x6
ABA-048
Lamp assembly
AEL-060
Dial panel
AAG-114
Double meter
AAW-040
Tuning shaft assembly
AXA-124
Screw 3x6
ABA-048
Screw 3x6
ABA-048
Screw 3x6
ABA-104
Angle
Angle
Angle
Lamp with wire
AEL-069
Lamp holder
AEB-080
Lamp with wire
AEL-069
Lamp with wire
AEL-064
Lamp with wire
AEL-068
Spacer M9x1t
M45-086
Nut
B71-004
Screw 3x6
ABA-048
Angle
Lamp with wire
AEL-066
Lamp with wire
AEL-067
Screw 3x6
ABA-048
Meter fitter

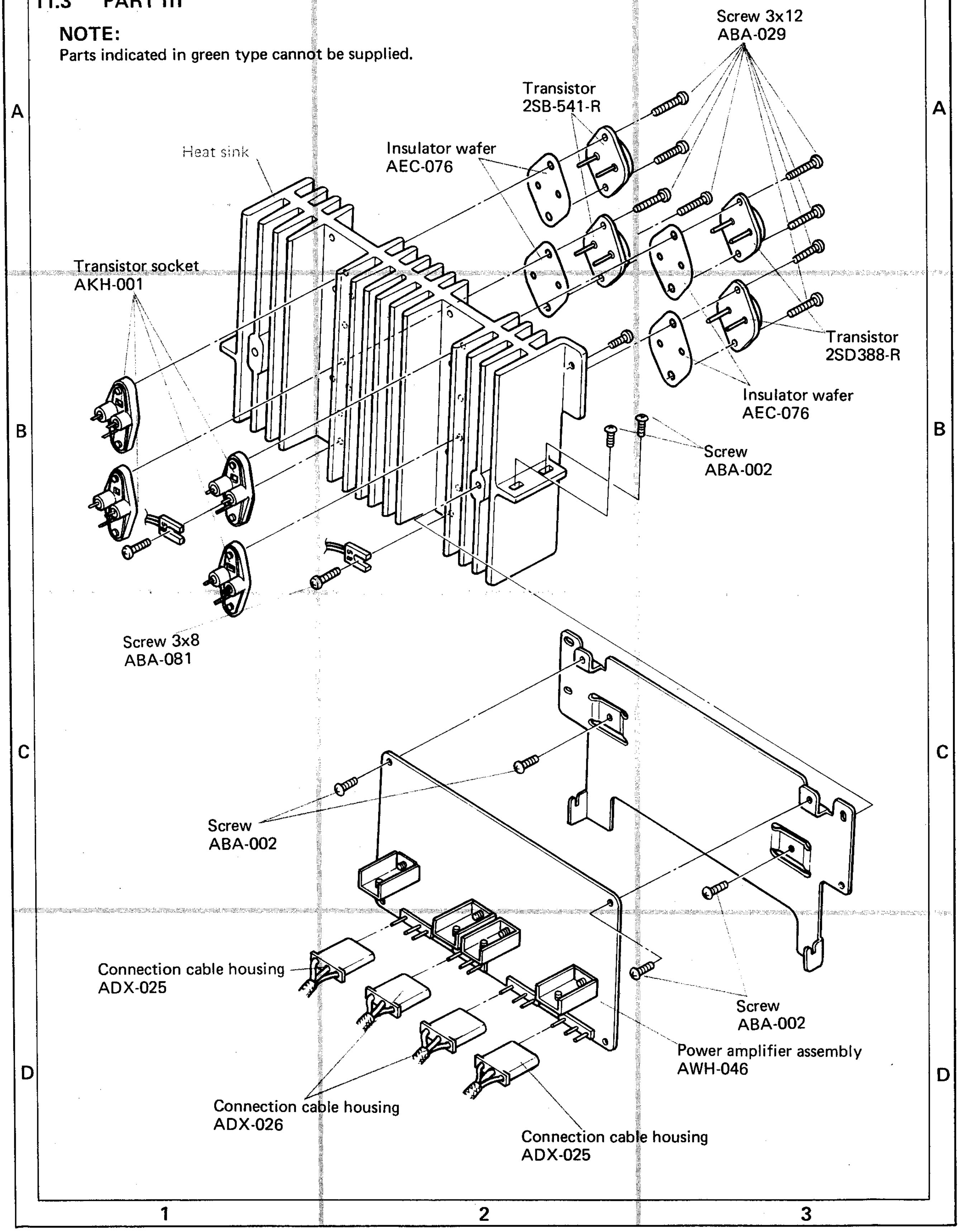
11.2 PART II

NOTE:
Parts indicated in green type cannot be supplied.


Power transformer
ATT-264 (KU model)
ATT-301 (KC model)
Power transformer
mounting holder
Terminal strip (2P)
AKC-030
Screw 3x6
ABA-048
Fuse holder (1P)
AKR-032
Screw 3x6
ABA-056
Fuse
AEK-100
Nut M4
ABN-013
Ground terminal (4P)
Screw 3x6
ABA-048
Ground terminal (4P)
Shield plate

11.3 PART III

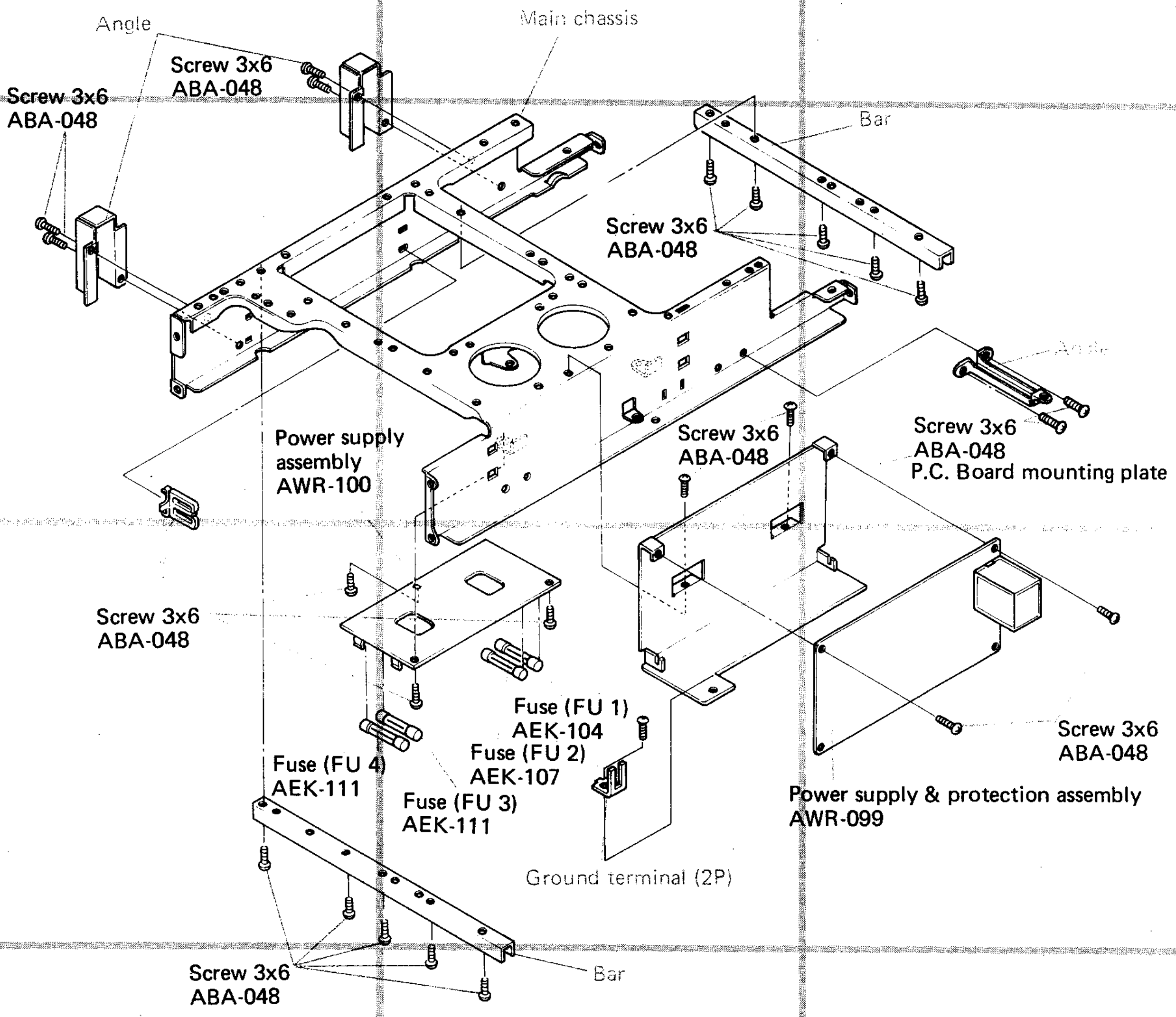
NOTE:
Parts indicated in green type cannot be supplied.


Screw 3x12
ABA-029
Transistor
2SB-541-R
Heat sink
Insulator wafer
AEC-076
Transistor socket
AKH-001
Transistor
2SD388-R
Insulator wafer
AEC-076
Screw
ABA-002
Screw 3x8
ABA-081
Screw
ABA-002
Connection cable housing
ADX-025
Screw
ABA-002
Power amplifier assembly
AWH-046
Connection cable housing
ADX-026
Connection cable housing
ADX-025
A
B
C
D
1
2
3

11.4 PART IV

NOTE:

Parts indicated in green type cannot be supplied.

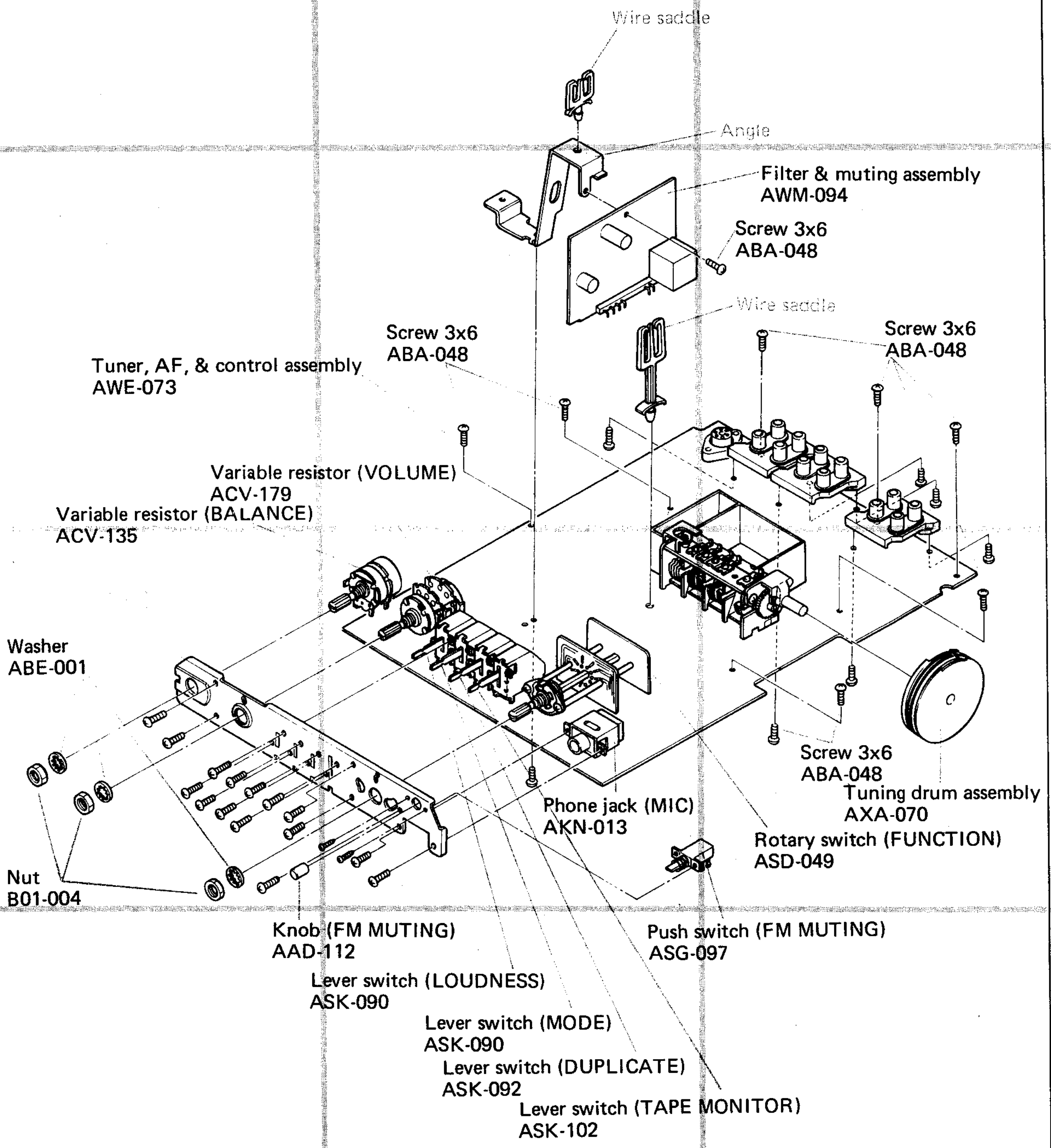


Angle
Screw 3x6
ABA-048
Screw 3x6
ABA-048
Main chassis
Bar
Screw 3x6
ABA-048
Angle
Screw 3x6
ABA-048
P.C. Board mounting plate
Screw 3x6
ABA-048
Power supply
assembly
AWR-100
Screw 3x6
ABA-048
Fuse (FU 1)
AEK-104
Fuse (FU 2)
AEK-107
Fuse (FU 4)
AEK-111
Fuse (FU 3)
AEK-111
Screw 3x6
ABA-048
Power supply & protection assembly
AWR-099
Ground terminal (2P)
Screw 3x6
ABA-048
Bar
1
2
3
A
B
C
D

11.5 PART V

NOTE:

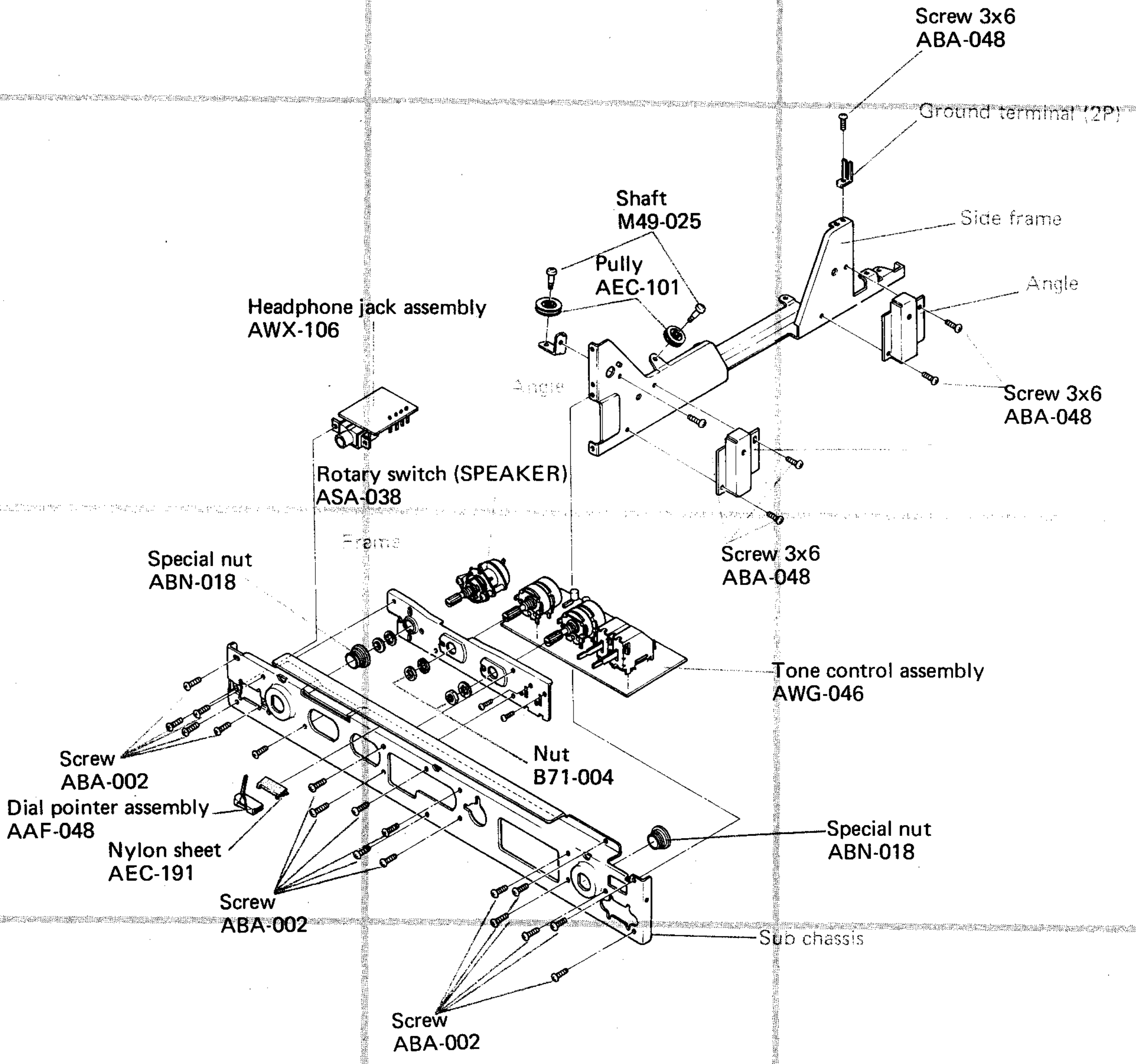
Parts indicated in green type cannot be supplied.


1
2
3
A
B
C
D
Wire saddle
Angle
Filter & muting assembly
AWM-094
Screw 3x6
ABA-048
Wire saddle
Screw 3x6
ABA-048
Screw 3x6
ABA-048
Tuner, AF, & control assembly
AWE-073
Variable resistor (VOLUME)
ACV-179
Variable resistor (BALANCE)
ACV-135
Washer
ABE-001
Screw 3x6
ABA-048
Tuning drum assembly
AXA-070
Phone jack (MIC)
AKN-013
Rotary switch (FUNCTION)
ASD-049
Nut
B01-004
Knob (FM MUTING)
AAD-112
Push switch (FM MUTING)
ASG-097
Lever switch (LOUDNESS)
ASK-090
Lever switch (MODE)
ASK-090
Lever switch (DUPLICATE)
ASK-092
Lever switch (TAPE MONITOR)
ASK-102
1
2
3

11.6 PART VI

NOTE:

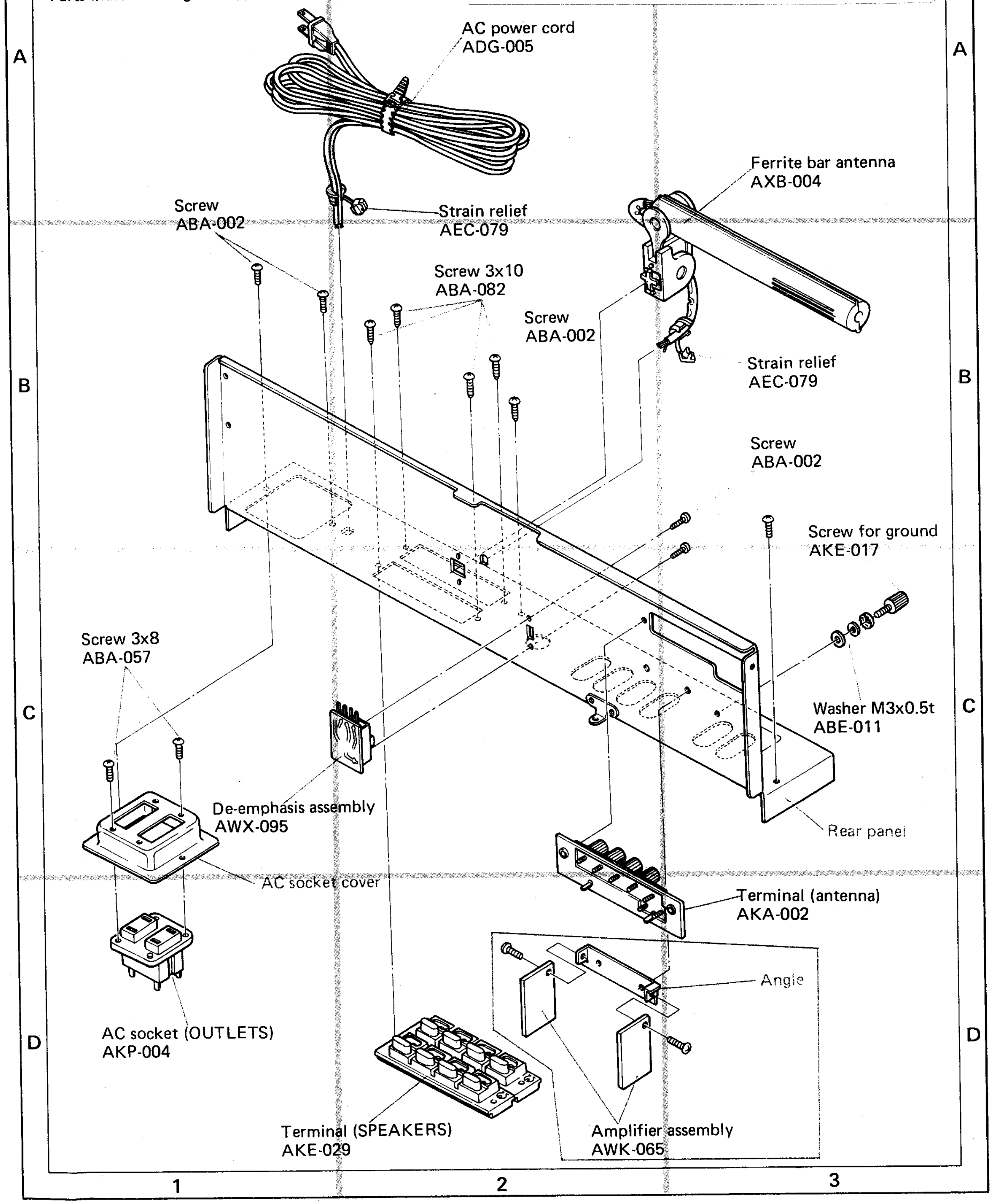
Parts indicated in green type cannot be supplied.


Screw 3x6
ABA-048
Ground terminal (2P)
Shaft
M49-025
Side frame
Pully
AEC-101
Angle
Headphone jack assembly
AWX-106
Angle
Screw 3x6
ABA-048
Rotary switch (SPEAKER)
ASA-038
Frame
Screw 3x6
ABA-048
Special nut
ABN-018
Tone control assembly
AWG-046
Screw
ABA-002
Nut
B71-004
Dial pointer assembly
AAF-048
Nylon sheet
AEC-191
Special nut
ABN-018
Screw
ABA-002
Sub chassis
Screw
ABA-002

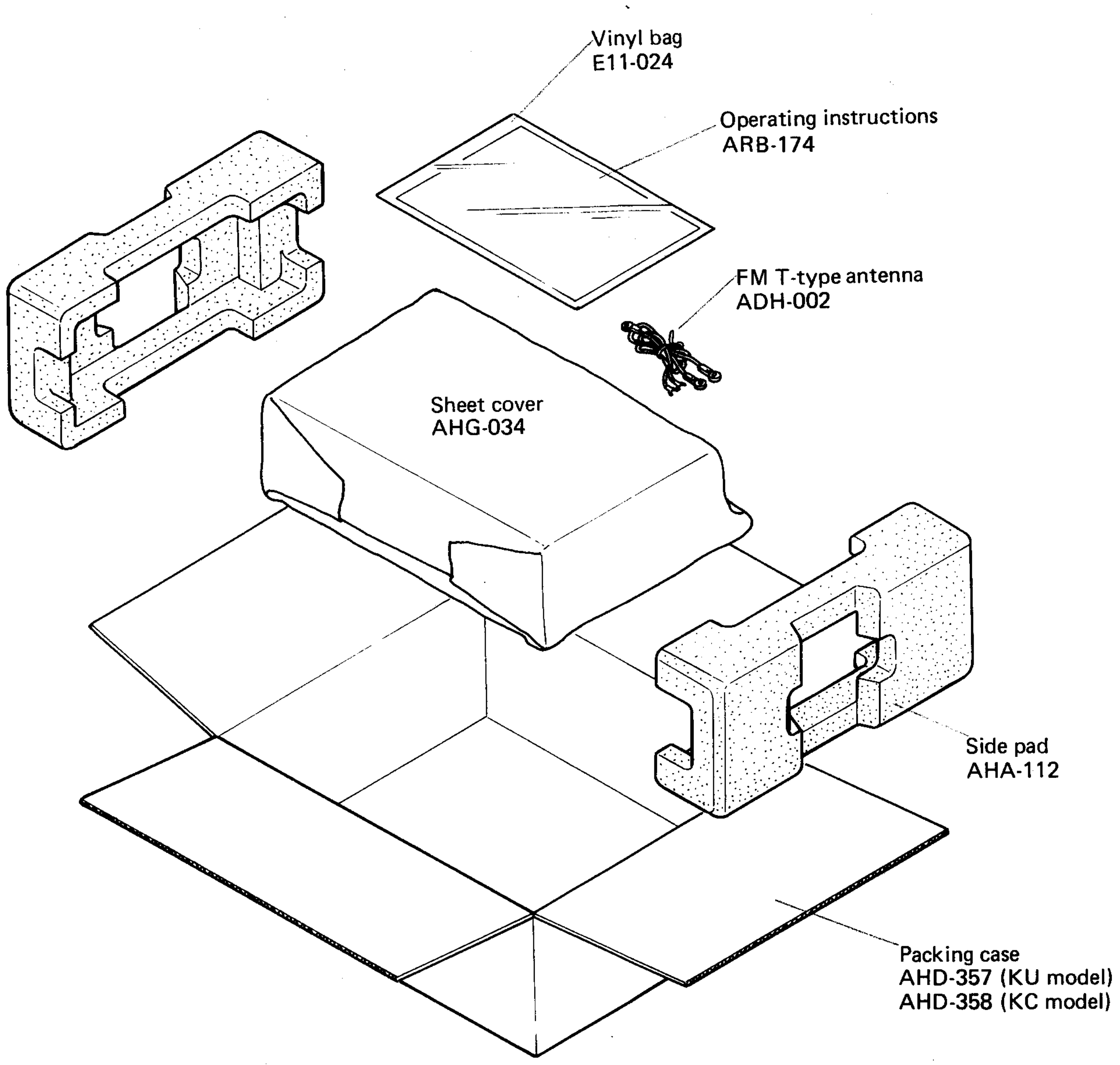
11.7 PART VII

NOTE:
Parts indicated in green type cannot be supplied.

Although there are some units in the SX-750 series which do not contain green line encircled components, this is not an error.

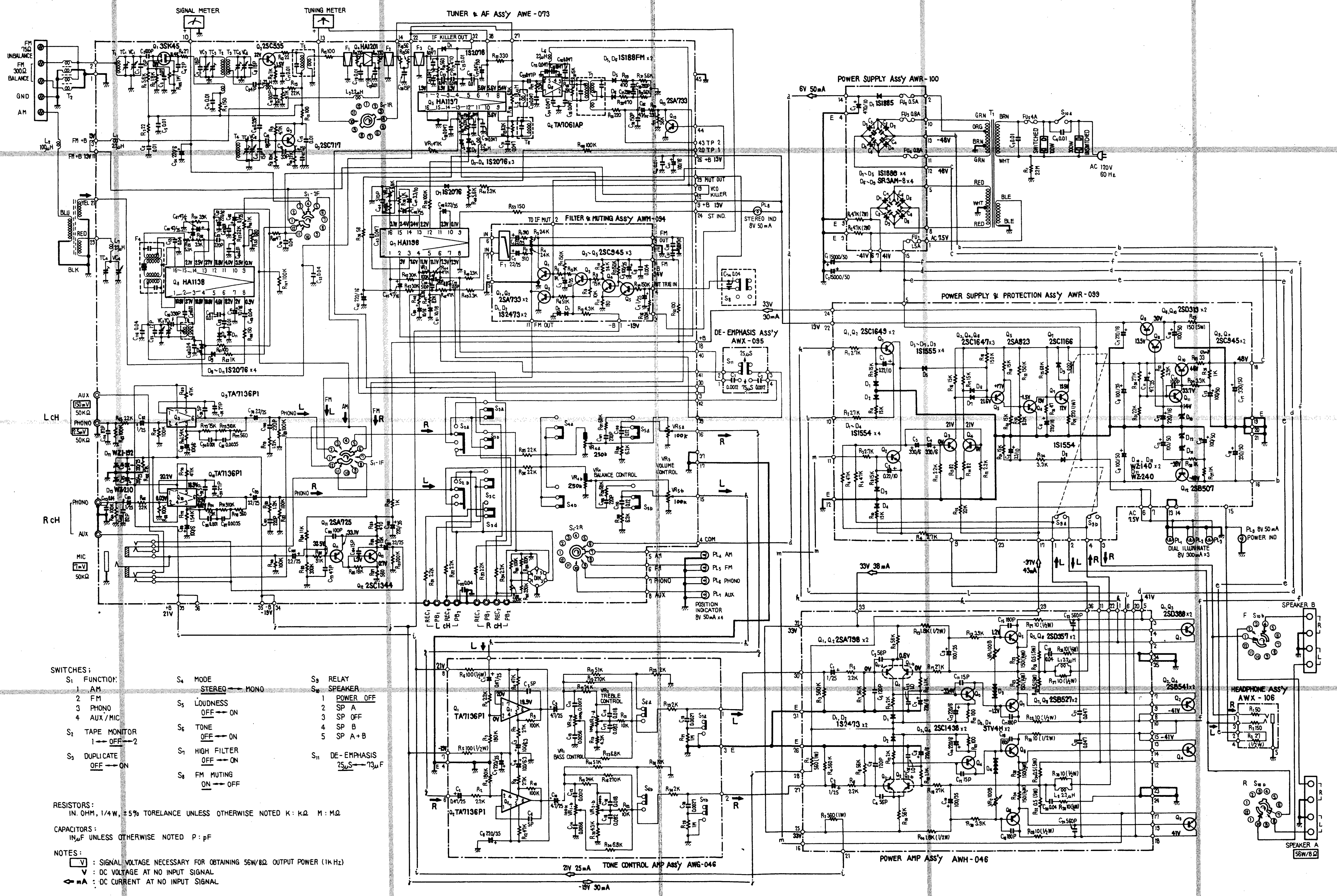

1
2
3
A
B
C
D
AC power cord
ADG-005
Screw
ABA-002
Strain relief
AEC-079
Ferrite bar antenna
AXB-004
Screw 3x10
ABA-082
Screw
ABA-002
Strain relief
AEC-079
Screw
ABA-002
Screw for ground
AKE-017
Screw 3x8
ABA-057
Washer M3x0.5t
ABE-011
De-emphasis assembly
AWX-095
Rear panel
AC socket cover
Terminal (antenna)
AKA-002
Angle
AC socket (OUTLETS)
AKP-004
Terminal (SPEAKERS)
AKE-029
Amplifier assembly
AWK-065

11.8 PACKING


Vinyl bag
E11-024
Operating instructions
ARB-174
FM T-type antenna
ADH-002
Sheet cover
AHG-034
Side pad
AHA-112
Packing case
AHD-357 (KU model)
AHD-358 (KC model)

12. SCHEMATIC DIAGRAMS. P. C. BOARD PATTERNS AND PARTS LIST

12.1 SCHEMATIC DIAGRAMS


1
2
3
4
5
6
A
B
C
D
SIGNAL METER
TUNING METER
TUNER & AF ASS'Y AWE-073
FM 75Ω UNBALANCE
FM 300Ω BALANCE
GND
AM
Q1 3SK45
Q2 2SC535
Q3 2SC717
Q4 HA1201
Q5 HA1137
Q6 TA7061AP
Q13 2SA733
D1 1S2076
D2~D4 1S2076 x3
D5, D6 1S188FM x2
Q8 HA1138
D8~D11 1S2076 x4
Q7 HA1196
D7 1S2076
IF KILLER OUT
44
43 TP 2
20 TP 1
26 +B 13V
29 MUT OUT
19 VCO KILLER
9 +B 13V
24 ST IND.
PL8
STEREO IND 8V 50mA
FM +B
FM+B 13V
S1-2F
S1-1R
TO IF MUT
FILTER & MUTING ASS'Y AWM-094
Q1, Q2 2SA733 x2
D1, D2 1S2473 x2
Q3~Q5 2SC945 x3
FM OUT
MUT TRIG IN
-B -19V
DE-EMPHASIS ASS'Y AWX-095
S11
25μS
75μS
33V 30mA
POWER SUPPLY ASS'Y AWR-100
6V 50mA
D1 1S1885
D1~D5 1S1886 x4
D6~D9 SR3AM-8 x4
-48V
48V
AC 7.5V
-41V
41V
SWITCHED
UNSWITCHED
AC 120V 60 Hz
GRN
ORG
BRN
WHT
RED
BLE
POWER SUPPLY & PROTECTION ASS'Y AWR-099
Q1, Q2 2SC1649 x2
D5~D7, D3 1S1555 x4
Q3, Q4, Q6 2SC1647 x3
Q5 2SA823
Q7 2SC1166
Q8, Q10 2SD313 x2
Q9, Q11 2SC945 x2
D1~D4 1S1554 x4
1S1554
D10, D12 WZ-140 x2
D11 WZ-240
Q12 2SB507
S9a
S9b
PL1 PL2 PL3
DIAL ILLUMINATE 8V 300mA x3
PL9 8V 50mA POWER IND
-37V 43mA
33V 38mA
AUX 150mV 50KΩ
PHONO 2.5mV 50KΩ
L cH
R cH
MIC 7mV 50KΩ
Q9 TA7136P1
Q10 TA7136P1
D12 WZ-192
D13 WZ-210
Q11 2SA725
Q12 2SC1344
S1-1F
S1-2R
PHONO L
PHONO R
VR4 BALANCE CONTROL
VR5 VOLUME CONTROL
REC1 PB1 REC2 PB2 L cH
REC1 PB1 REC2 PB2 R cH
DIN
PL4 AM
PL5 FM
PL6 PHONO
PL7 AUX
POSITION INDICATOR 8V 50mA x4
+B 21V
-B -19V
Q1 TA7136P1
Q2 TA7136P1
VR1 BASS CONTROL
VR2 TREBLE CONTROL
TONE CONTROL AMP ASS'Y AWG-046
21V 25mA
-19V 30mA
Q1, Q2 2SA798 x2
D1, D2 1S2473 x2
Q3, Q4 2SC1436 x2
D3, D4 STV4H x2
Q5, Q6 2SD357 x2
Q7, Q8 2SB527 x2
Q1, Q3 2SD388 x2
Q2, Q4 2SB541 x2
POWER AMP ASS'Y AWH-046
HEADPHONE ASS'Y AWX-106
SPEAKER B
SPEAKER A 56W/8Ω
S10a
S10b

SWITCHES;

S1 FUNCTION
1 AM
2 FM
3 PHONO
4 AUX/MIC

S2 TAPE MONITOR
1 ←→ OFF ←→ 2

S3 DUPLICATE
OFF ←→ ON

S4 MODE
STEREO ←→ MONO

S5 LOUDNESS
OFF ←→ ON

S6 TONE
OFF ←→ ON

S7 HIGH FILTER
OFF ←→ ON

S8 FM MUTING
ON ←→ OFF

S9 RELAY

S10 SPEAKER
1 POWER OFF
2 SP A
3 SP OFF
4 SP B
5 SP A+B

S11 DE-EMPHASIS
25μS ←→ 75μF

RESISTORS:
IN. OHM, 1/4W, ±5% TORELANCE UNLESS OTHERWISE NOTED K: kΩ M: MΩ

CAPACITORS:
INμF UNLESS OTHERWISE NOTED P: pF

NOTES:
▭V : SIGNAL VOLTAGE NECESSARY FOR OBTAINING 56W/8Ω OUTPUT POWER (1kHz)
V : DC VOLTAGE AT NO INPUT SIGNAL
⇦ mA : DC CURRENT AT NO INPUT SIGNAL

12.2 MISCELLANEOUS PARTS

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	Transistor	2SD 388-R
Q2	Transistor	2SB 541-R
Q3	Transistor	2SD 388-R
Q4	Transistor	2SB 541-R

CAPACITORS

Symbol	Description	Part No.
C1	Electrolytic 15,000 50V	ACH-057
C2	Electrolytic 15,000 50V	ACH-057
C3	Ceramic 0.01 150V (DC1.4kV)	ACG-003
C4	Ceramic 0.01 150V (DC1.4kV)	ACG-001

SWITCHES

Symbol	Description	Part No.
S1	Rotary switch	ASA-039

LAMPS

Symbol	Description	Part No.
PL1	Lamp assembly (8V, 0.3A)	AEL-060
PL2	Lamp assembly (8V, 0.3A)	AEL-060
PL3	Lamp assembly (8V, 0.3A)	AEL-060
PL4	Lamp with leads (8V, 50mA)	AEL-064
PL5	Lamp with leads (8V, 50mA)	AEL-068
PL6	Lamp with leads (8V, 50mA)	AEL-066
PL7	Lamp with leads (8V, 50mA)	AEL-067
PL8	Lamp with leads (8V, 50mA)	AEL-069
PL9	Lamp with leads (8V, 50mA)	AEL-069

FUSES

Symbol	Description	Part No.
FU1	Fuse 1.5A	AEK-104
FU2	Fuse 0.5A	AEK-107
FU3	Fuse 0.8A	AEK-111
FU4	Fuse 0.8A	AEK-111
FU5	Fuse 4A	AEK-100

COILS, TRANSFOMER

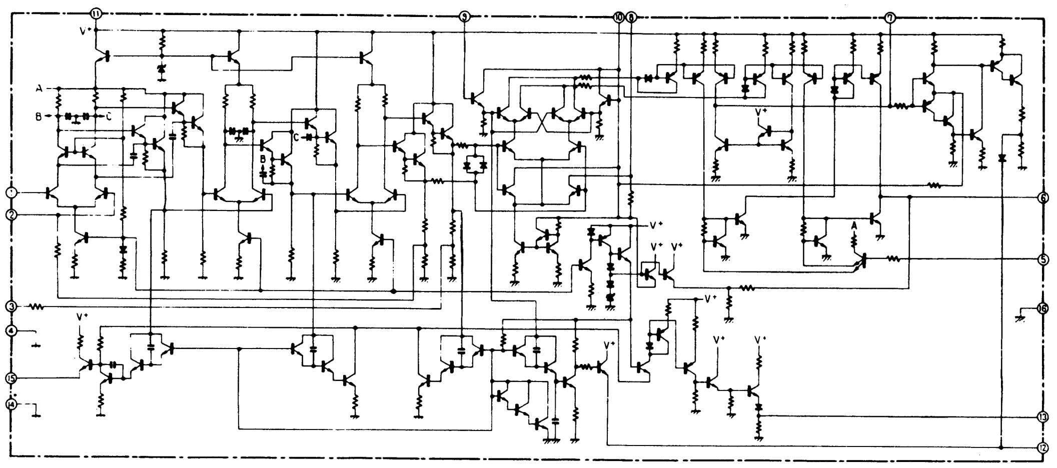
Symbol	Description	Part No.
T1	Power transformer (KU model) Power transformer (KC model)	ATT-264 ATT-301
T2	Ferrite balun	T22-025
L1	Ferrite bar antenna	AXB-004
L2	Chock coil	T24-030

RESISTOR

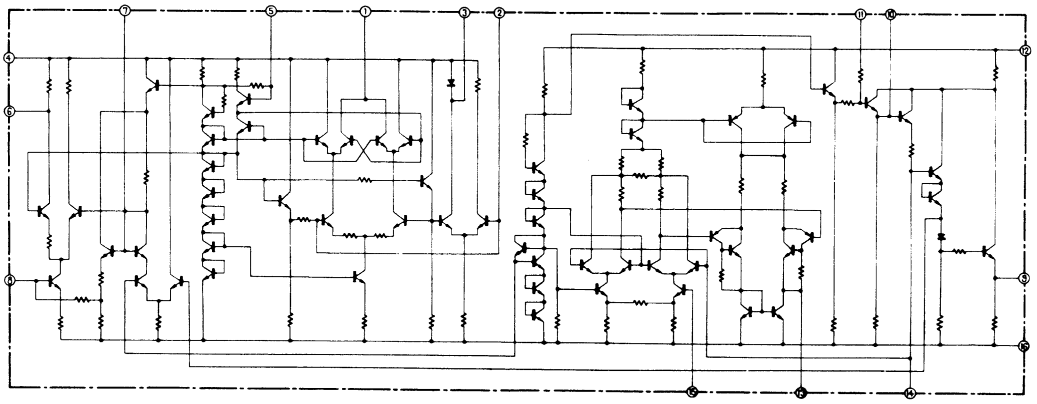
Symbol	Description	Part No.
R1	Carbon film 2.2M ½W	RD½PS 225J

12.3 INTERNAL CIRCUITRY OF INTEGRATED CIRCUITS

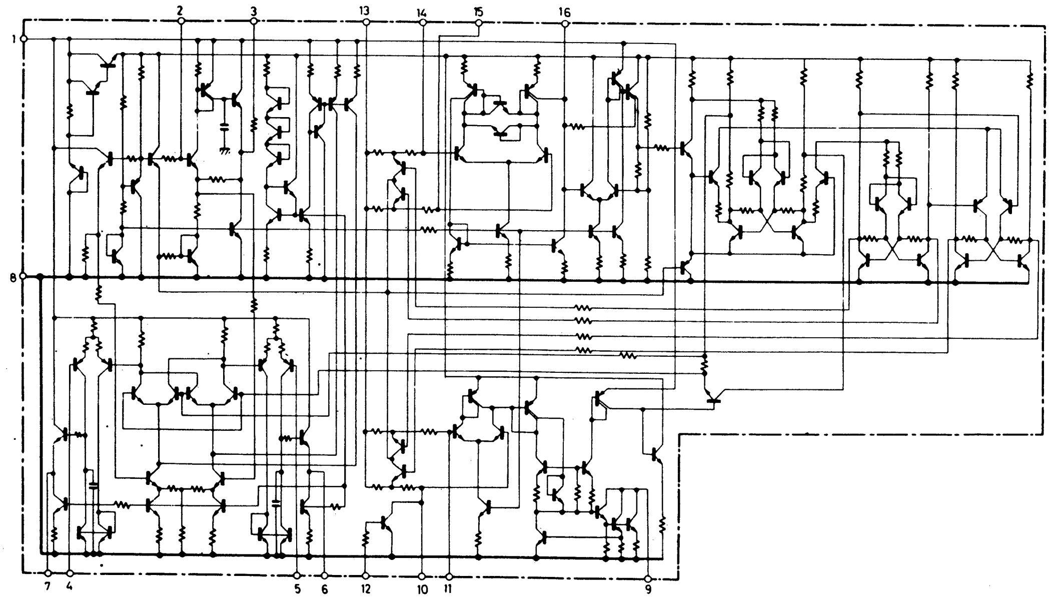
HA1137 (FM IF IC)



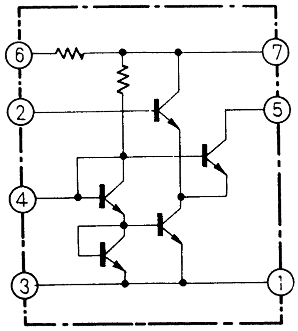
HA1138 (AM IC)



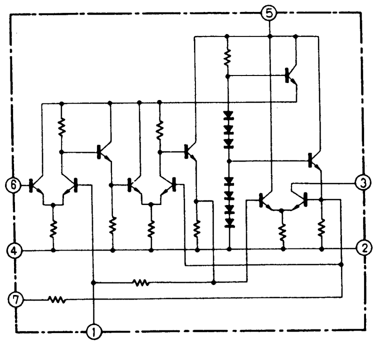
HA1196


2
3
13
14
15
16
1
8
7
4
5
6
12
10
11
9

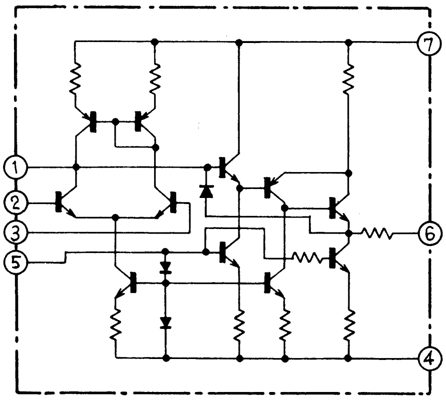
HA1201



TA7061AP

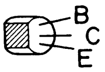


TA7136P1

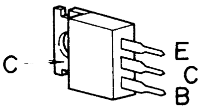


External Appearance of Transistors and ICs

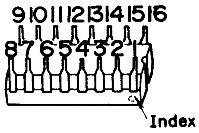
2SA823
2SC945A
2SC1438
2SC1647
2SC1649



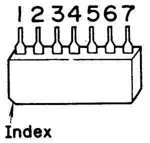
2SB507
2SD313



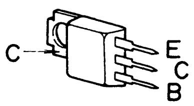
HA1137
HA1138
HA1196


9 10 11 12 13 14 15 16
8 7 6 5 4 3 2 1
Index

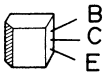
TA7061AP
TA7136P1


1 2 3 4 5 6 7
Index

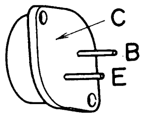
2SB527
2SD357



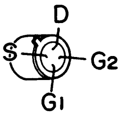
2SC461
2SC535
2SC1344



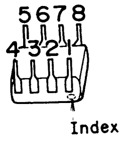
2SB541
2SD388



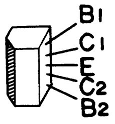
3SK45



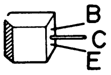
HA1201


5 6 7 8
4 3 2 1
Index

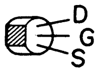
2SA798



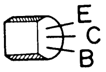
2SC1166



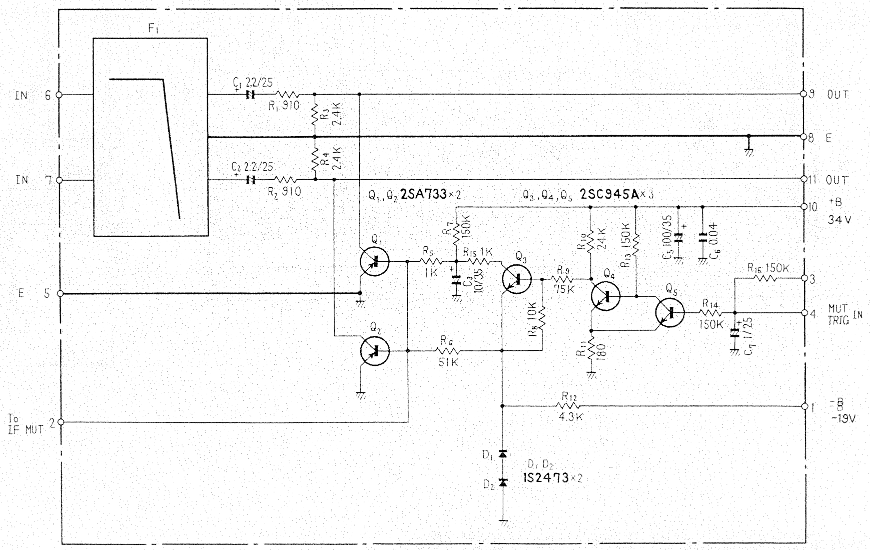
2SK30A

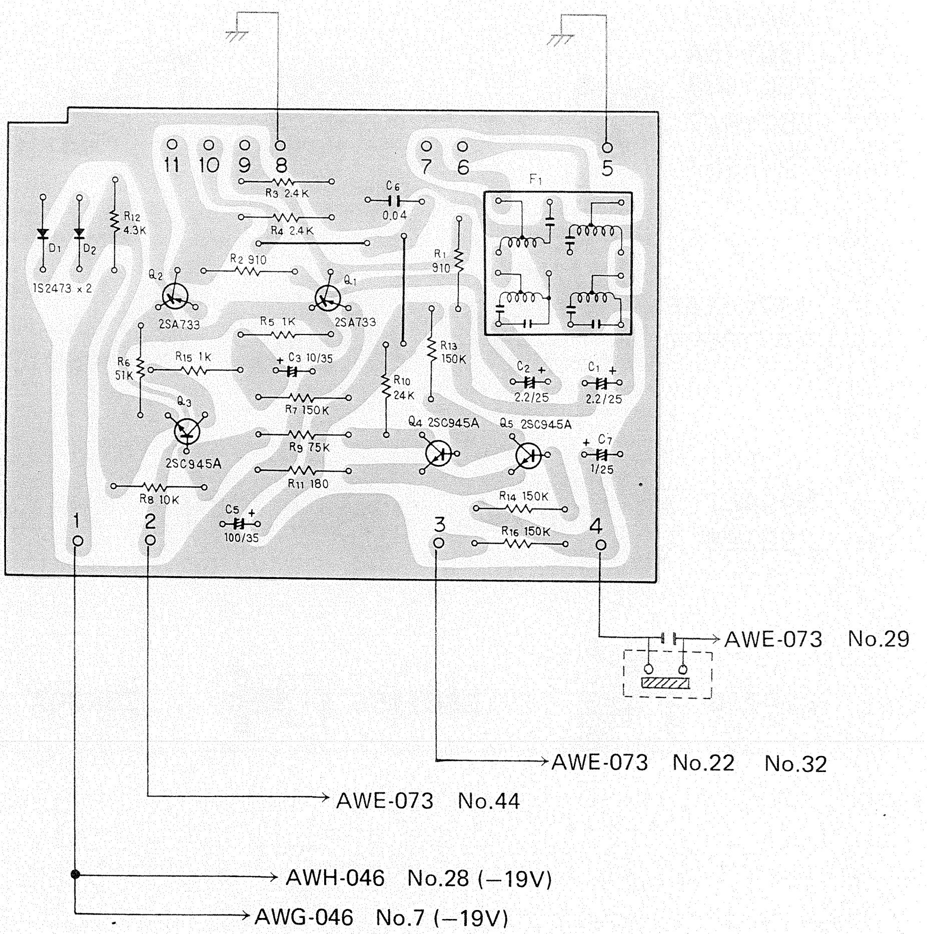


2SA725



12.4 FILTER & MUTING ASSEMBLY (AWM-094)


F1
IN 6
IN 7
E 5
To IF MUT 2
C1 2.2/25
R1 910
C2 2.2/25
R2 910
R3 2.4K
R4 2.4K
Q1, Q2 2SA733×2
Q3, Q4, Q5 2SC945A×3
Q1
Q2
Q3
Q4
Q5
R5 1K
R6 51K
R7 150K
R8 10K
R9 75K
R10 24K
R11 180
R12 4.3K
R13 150K
R14 150K
R15 1K
R16 150K
C3 10/35
C5 100/35
C6 0.04
C7 1/25
D1
D2
D1 D2 1S2473×2
9 OUT
8 E
11 OUT
10 +B 34V
3
4 MUT TRIG IN
1 -B -19V


11
10
9
8
7
6
5
F1
R3 2.4K
C6 0.04
R4 2.4K
R12 4.3K
D1
D2
1S2473 x 2
R2 910
R1 910
Q2
Q1
2SA733
2SA733
R5 1K
R6 51K
R15 1K
C3 10/35
R13 150K
R10 24K
R7 150K
C2 2.2/25
C1 2.2/25
Q3
Q4 2SC945A
Q5 2SC945A
R9 75K
C7 1/25
2SC945A
R11 180
R8 10K
R14 150K
C5 100/35
R16 150K
1
2
3
4
AWE-073 No.29
AWE-073 No.22 No.32
AWE-073 No.44
AWH-046 No.28 (−19V)
AWG-046 No.7 (−19V)

Parts List of Filters & Muting Assembly (AWM-094)

SEMICONDUCTORS

Symbol	Description	Part No.
D1	Diode	1S2473
D2	Diode	1S2473
Q1	Transistor	2SA733-Q
Q2	Transistor	2SA733-Q
Q3	Transistor	2SC945-R
Q4	Transistor	2SC945-R
Q5	Transistor	2SC945-R

RESISTORS

Symbol	Description		Part No.
R1	Carbon film	910	RD¼PS 911J
R2	Carbon film	910	RD¼PS 911J
R3	Carbon film	2.4k	RD¼PS 242J
R4	Carbon film	2.4k	RD¼PS 242J
R5	Carbon film	1k	RD¼PS 102J
R6	Carbon film	51k	RD¼PS 513J
R7	Carbon film	150k	RD¼PS 154J
R8	Carbon film	10k	RD¼PS 103J
R9	Carbon film	75k	RD¼PS 753J
R10	Carbon film	24k	RD¼PS 243J
R11	Carbon film	180	RD¼PS 181J
R12	Carbon film	4.3k	RD¼PS 432J
R13	Carbon film	150k	RD¼PS 154J
R14	Carbon film	150k	RD¼PS 154J
R15	Carbon film	1k	RD¼PS 102J
R16	Carbon film	150k	RD¼PS 154J

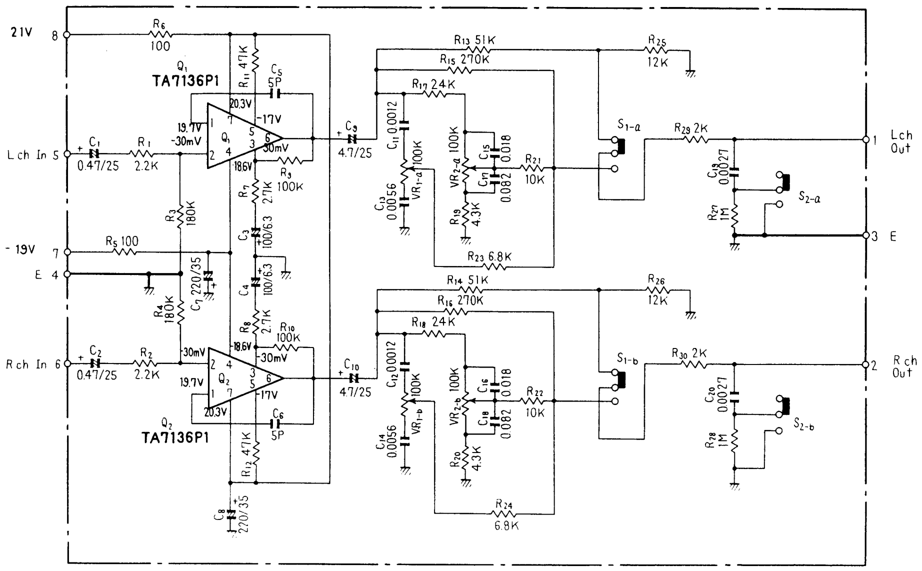
CAPACITORS

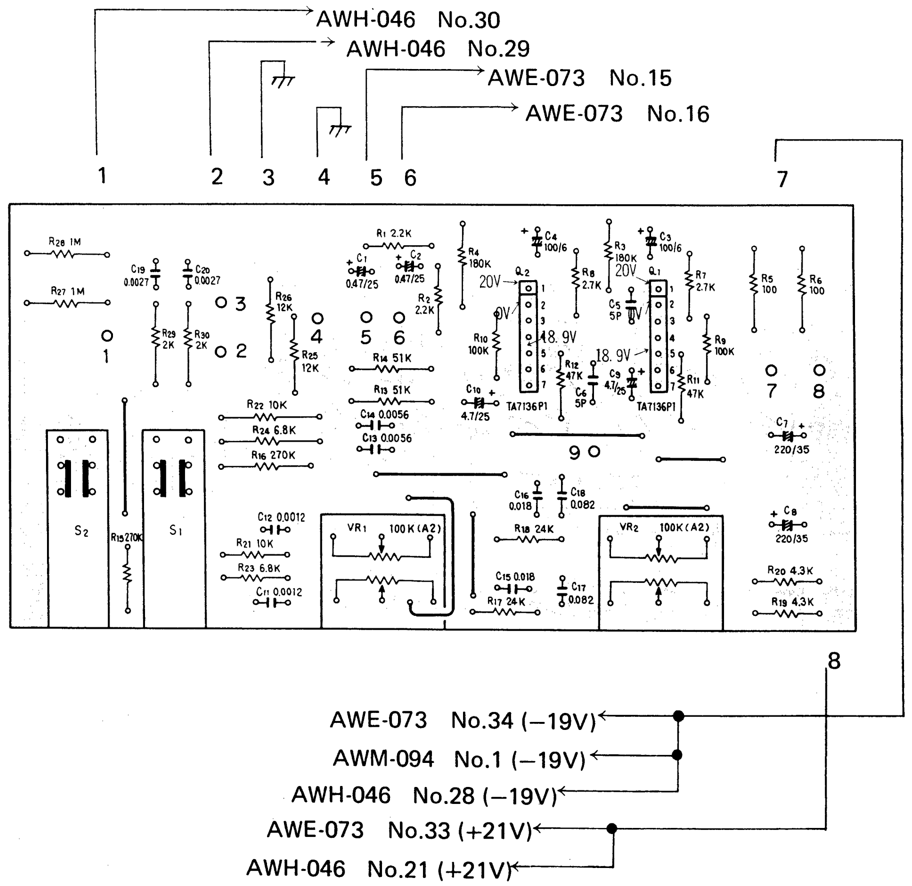
Symbol	Description			Part No.
C1	Electrolytic	2.2	25V	CSZA 2R2M 25
C2	Electrolytic	2.2	25V	CSZA 2R2M 25
C3	Electrolytic	10	35V	CEA 100P 35
C4	....			....
C5	Electrolytic	100	35V	CEA 101P 35
C6	Ceramic	0.04	50V	CKDYF 403Z 50
C7	Electrolytic	1	25V	CSZA 010M 25

OTHERS

Symbol	Description	Part No.
	Low pass filter	ATF-033
	L-type terminal	AKC-035

12.5 TONE CONTROL ASSEMBLY (AWG-046)


21V 8
Lch In 5
- 19V 7
E 4
Rch In 6
Q1 TA7136P1
Q2 TA7136P1
R6 100
R5 100
C1 0.47/25
C2 0.47/25
R1 2.2K
R2 2.2K
R3 180K
R4 180K
C7 220/35
C8 270/35
R11 47K
R12 47K
C5 5P
C6 5P
R9 100K
R10 100K
R7 2.7K
R8 2.7K
C3 100/6.3
C4 100/6.3
C9 4.7/25
C10 4.7/25
20.3V
19.7V
-30mV
18.6V
-17V
30mV
R13 51K
R14 51K
R15 270K
R16 270K
R17 24K
R18 24K
C11 0.0012
C12 0.0012
C13 0.0056
C14 0.0056
VR1-a 100K
VR1-b 100K
VR2-a 100K
VR2-b 100K
C15 0.018
C16 0.018
C17 0.082
C18 0.082
R19 4.3K
R20 4.3K
R21 10K
R22 10K
R23 6.8K
R24 6.8K
R25 12K
R26 12K
S1-a
S1-b
R29 2K
R30 2K
C19 0.0027
C20 0.0027
R27 1M
R28 1M
S2-a
S2-b
1 Lch Out
3 E
2 Rch Out


AWH-046 No.30
AWH-046 No.29
AWE-073 No.15
AWE-073 No.16
1
2
3
4
5
6
7
8
R28 1M
R27 1M
C19 0.0027
C20 0.0027
R29 2K
R30 2K
R26 12K
R25 12K
R1 2.2K
C1 0.47/25
C2 0.47/25
R2 2.2K
R4 180K
C4 100/6
R8 2.7K
R3 180K
C3 100/6
R7 2.7K
R5 100
R6 100
20V
0V
18.9V
R10 100K
R12 47K
C5 5P
C6 5P
C9 4.7/25
R9 100K
R11 47K
TA7136P1
C10 4.7/25
R14 51K
R13 51K
C14 0.0056
C13 0.0056
R22 10K
R24 6.8K
R16 270K
C7 220/35
9 0
C16 0.018
C18 0.082
C12 0.0012
R21 10K
R23 6.8K
C11 0.0012
S2
S1
R15 270K
VR1 100K(A2)
VR2 100K(A2)
R18 24K
C15 0.018
C17 0.082
R17 24K
C8 220/35
R20 4.3K
R19 4.3K
AWE-073 No.34 (−19V)
AWM-094 No.1 (−19V)
AWH-046 No.28 (−19V)
AWE-073 No.33 (+21V)
AWH-046 No.21 (+21V)

Parts List of Tone Control Assembly (AWG-046)

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	IC	TA7136P1
Q2	IC	TA7136P1
	Volume switch	
VR1	Variable resistor (BASS) 100k-A2	ACV-138
VR2	Variable resistor (TREBLE)100k-A2	ACV-138
SW1	Lever switch (S1-TONE)	ASK-090
SW2	Lever switch (S2-HIGH FILTER)	ASK-090

RESISTORS

Symbol	Description		Part No.
R1	Carbon film	2.2k	RD¼PM 222J
R2	Carbon film	2.2k	RD¼PM 222J
R3	Carbon film	180k	RD¼PM184J
R4	Carbon film	180k	RD¼PS 184J
R5	Carbon film	100	RD¼PS 101J
R6	Carbon film	100	RD¼PS 101J
R7	Carbon film	2.7k	RD¼PM 272J
R8	Carbon film	2.7k	RD¼PM 272J
R9	Carbon film	100k	RD¼PM 104J
R10	Carbon film	100k	RD¼PM 104J
R11	Carbon film	47k	RD¼PM 473J
R12	Carbon film	47k	RD¼PM 473J
R13	Carbon film	51k	RD¼PS 513J
R14	Carbon film	51k	RD¼PS 513J
R15	Carbon film	270k	RD¼PM 274J
R16	Carbon film	270k	RD¼PS 274J
R17	Carbon film	24k	RD¼PM 243J
R18	Carbon film	24k	RD¼PM 243J
R19	Carbon film	4.3k	RD¼PM 432J
R20	Carbon film	4.3k	RD¼PM 432J
R21	Carbon film	10k	RD¼PM 103J
R22	Carbon film	10k	RD¼PS 103J
R23	Carbon film	6.8k	RD¼PM 682J
R24	Carbon film	6.8k	RD¼PS 682J
R25	Carbon film	12k	RD¼PS 123J
R26	Carbon film	12k	RD¼PS 123J
R27	Carbon film	1M	RD¼PS 105J
R28	Carbon film	1M	RD¼PS 105J
R29	Carbon film	2k	RD¼PS 202J
R30	Carbon film	2k	RD¼PS 202J

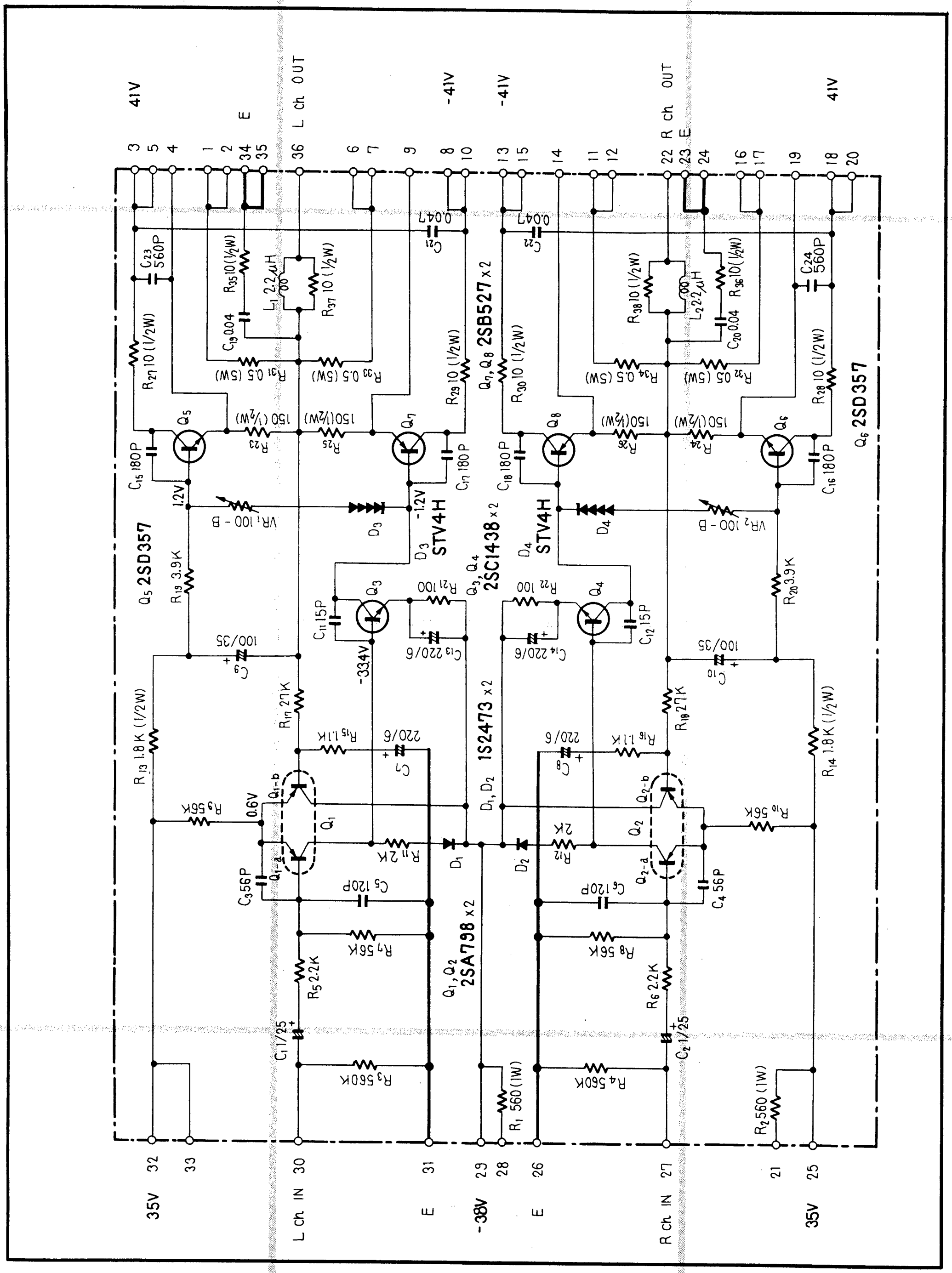
CAPACITORS

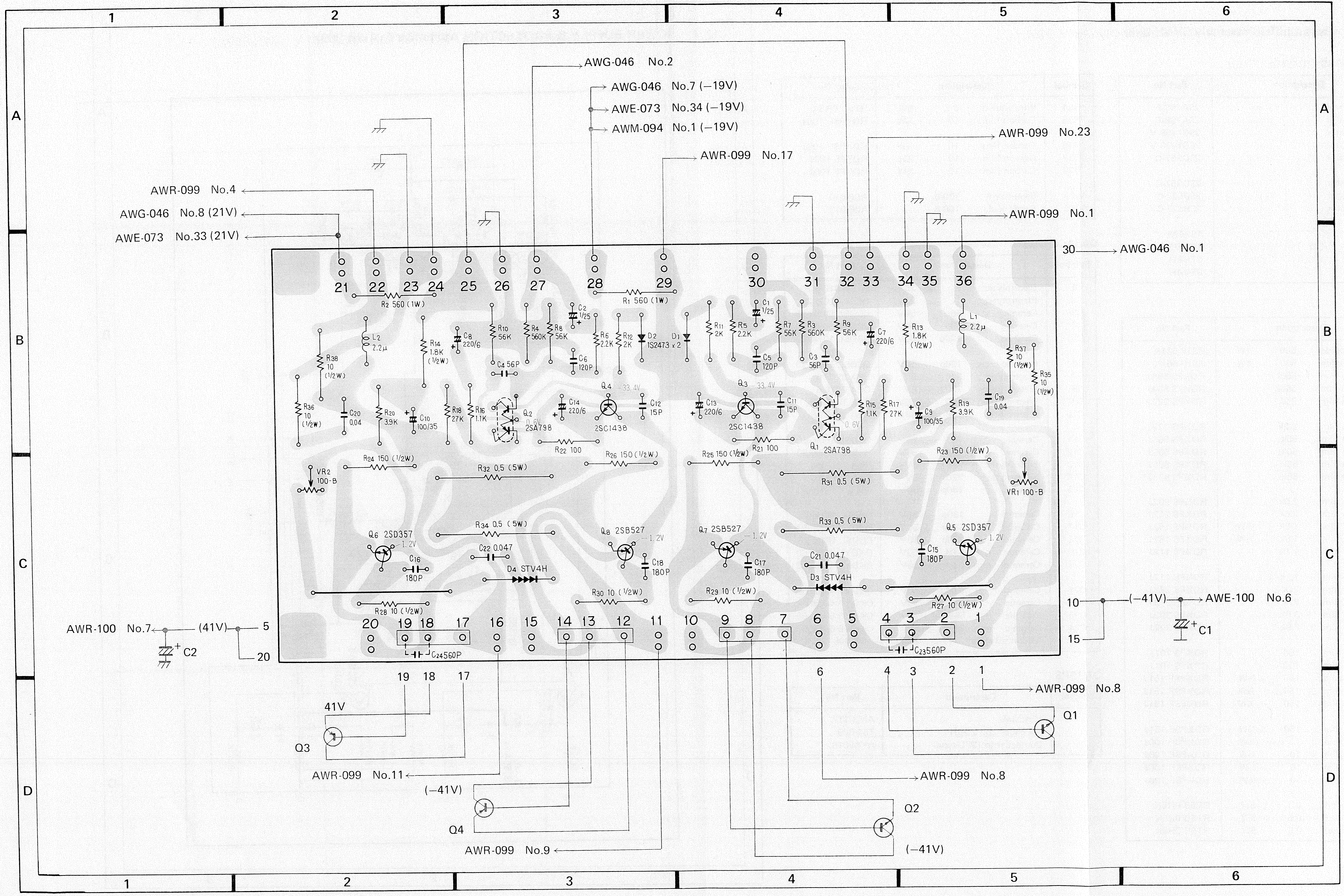
Symbol	Description			Part No.
C1	Electrolytic	0.47	25V	CSSA R47M 25
C2	Electrolytic	0.47	25V	CSSA R47M 25
C3	Electrolytic	100	6V	CEA 101P 6
C4	Electrolytic	100	6V	CEA 101P 6
C5	Ceramic	5p	50V	CCDSL 050D 50
C6	Ceramic	5p	50V	CCDSL 050D 50
C7	Electrolytic	220	35V	CEA 221P 35
C8	Electrolytic	220	35V	CEA 221P 35
C9	Electrolytic	4.7	25V	CEANL 4R7P 25
C10	Electrolytic	4.7	25V	CEANL 4R7P 25
C11	Mylar	0.0012	50V	CQMA 122J 50
C12	Mylar	0.0012	50V	CQMA 122J 50
C13	Mylar	0.0056	50V	CQMA 562J 50
C14	Mylar	0.0056	50V	CQMA 562J 50
C15	Mylar	0.018	50V	CQMA 183J 50
C16	Mylar	0.018	50V	CQMA 183J 50
C17	Mylar	0.082	50V	CQMA 823J 50
C18	Mylar	0.082	50V	CQMA 823J 50
C19	Mylar	0.0027	50V	CQMA 272J 50
C20	Mylar	0.0027	50V	CQMA 272J 50

OTHERS

Symbol	Description	Part No.
	Nut	B71-004
	Washer	ABE-001

12.6 POWER AMPLIFIER ASSEMBLY (AWH-046)


1
2
3
A
B
C
D
41V
3 5 4
1 2 34 35
E
36
L ch OUT
6 7
9
8 10
-41V
13 15
-41V
14
11 12
22
R ch OUT
23 E
24
16 17
19
18 20
41V
C23 560P
R35 10(1/2W)
L1 2.2μH
R37 10(1/2W)
C19 0.04
R31 0.5(5W)
R33 0.5(5W)
R27 10(1/2W)
C21 0.047
R29 10(1/2W)
Q7, Q8 2SB527 x2
C22 0.047
R30 10(1/2W)
R38 10(1/2W)
L2 2.2μH
R36 10(1/2W)
C20 0.04
R34 0.5(5W)
R32 0.5(5W)
C24 560P
R28 10(1/2W)
Q6 2SD357
Q5
R23 150(1/2W)
R25 150(1/2W)
Q7
C17 180P
C15 180P
1.2V
VR1 100-B
D3
-1.2V
D3 STV4H
Q3, Q4 2SC1438 x2
D4 STV4H
Q8
C18 180P
R26 150(1/2W)
R24 150(1/2W)
Q6
C16 180P
D4
VR2 100-B
Q5 2SD357
R19 3.9K
C11 15P
Q3
R21 100
C13 220/6
-33.4V
R22 100
C14 220/6
Q4
C12 15P
R20 3.9K
C9 100/35
C10 100/35
R17 27K
R15 1.1K
C7 220/6
D1, D2 1S2473 x2
C8 220/6
R16 1.1K
R18 27K
R13 1.8K(1/2W)
R14 1.8K(1/2W)
R9 56K
0.6V
Q1-b
Q1
Q1-a
R11 2K
D1
D2
R12 2K
Q2
Q2-b
Q2-a
R10 56K
C3 56P
C5 120P
C6 120P
C4 56P
R7 56K
R8 56K
R5 2.2K
R6 2.2K
Q1, Q2 2SA798 x2
C1 1/25
C2 1/25
R3 560K
R4 560K
R1 560(1W)
R2 560(1W)
32 33
35V
30
L ch IN
31
E
29 28
-38V
26
E
27
R ch IN
21 25
35V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AWG-046 No.7 (−19V)
AWE-073 No.34 (−19V)
AWM-094 No.1 (−19V)
AWR-099 No.23
AWR-099 No.17
AWR-099 No.4
AWG-046 No.8 (21V)
AWE-073 No.33 (21V)
AWR-099 No.1
AWG-046 No.1
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
R2 560 (1W)
R1 560 (1W)
L2 2.2μ
L1 2.2μ
R38 10 (1/2W)
R36 10 (1/2W)
C20 0.04
R20 3.9K
C10 100/35
R14 1.8K (1/2W)
C8 220/6
R18 27K
R16 1.1K
C4 56P
R10 56K
R4 560K
R8 56K
C2 1/25
C6 120P
R6 2.2K
R12 2K
D2 1S2473
D1 x 2
Q2 2SA798
C14 220/6
Q4 2SC1438
C12 15P
R22 100
R11 2K
R5 2.2K
C1 1/25
C5 120P
R7 56K
R3 560K
C3 56P
R9 56K
C7 220/6
R13 1.8K (1/2W)
R37 10 (1/2W)
R35 10 (1/2W)
C13 220/6
Q3 2SC1438
C11 15P
R21 100
Q1 2SA798
R15 1.1K
R17 27K
C9 100/35
R19 3.9K
C19 0.04
R24 150 (1/2W)
R26 150 (1/2W)
R25 150 (1/2W)
R23 150 (1/2W)
VR2 100-B
VR1 100-B
R32 0.5 (5W)
R31 0.5 (5W)
R34 0.5 (5W)
R33 0.5 (5W)
Q6 2SD357
Q8 2SB527
Q7 2SB527
Q5 2SD357
C22 0.047
C21 0.047
C16 180P
C18 180P
C17 180P
C15 180P
D4 STV4H
D3 STV4H
R28 10 (1/2W)
R30 10 (1/2W)
R29 10 (1/2W)
R27 10 (1/2W)
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
C24 560P
C23 560P
AWR-100 No.7
(41V)
C2
AWE-100 No.6
(−41V)
C1
41V
Q3
AWR-099 No.11
(−41V)
Q4
AWR-099 No.9
AWR-099 No.8
Q1
AWR-099 No.8
Q2
(−41V)
A
B
C
D
1
2
3
4
5
6

Parts List of Power Amplifier Assembly (AWH-046)

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	Transistor	2SA798-F
Q2	Transistor	2SA798-F
Q3	Transistor	2SC1438-V
Q4	Transistor	2SC1438-V
Q5	Transistor	2SD357-C
Q6	Transistor	2SD357-C
Q7	Transistor	2SB527-C
Q8	Transistor	2SB527-C
D1	Diode	1S2473
D2	Diode	1S2473
D3	Diode	STV4H
D4	Diode	STV4H

RESISTORS

Symbol	Description			Part No.
R1	Metal oxide	560	1W	RS1P 561K
R2	Metal oxide	560	1W	RS1P 561K
R3	Carbon film	560k		RD¼PS 564J
R4	Carbon film	560k		RD¼PS 564J
R5	Carbon film	2.2k		RD¼PS 222J
R6	Carbon film	2.2k		RD¼PS 222J
R7	Carbon film	56k		RD¼PS 563J
R8	Carbon film	56k		RD¼PS 563J
R9	Carbon film	56k		RD¼PS 563J
R10	Carbon film	56k		RD¼PS 563J
R11	Carbon film	2.0k		RD¼PS 202J
R12	Carbon film	2.0k		RD¼PS 202J
R13	Carbon film	1.8k	½W	RD½PS 182J
R14	Carbon film	1.8k	½W	RD½PS 182J
R15	Carbon film	1.1k		RD¼PS 112J
R16	Carbon film	1.1k		RD¼PS 112J
R17	Carbon film	27k		RD¼PS 273J
R18	Carbon film	27k		RD¼PS 273J
R19	Carbon film	3.9k		RD¼PS 392J
R20	Carbon film	3.9k		RD¼PS 392J
R21	Carbon film	100		RD¼PS 101J
R22	Carbon film	100		RD¼PS 101J
R23	Carbon film	150	½W	RD½PSF 151J
R24	Carbon film	150	½W	RD½PSF 151J
R25	Carbon film	150	½W	RD½PSF 151J
R26	Carbon film	150	½W	RD½PSF 151J
R27	Carbon film	10	½W	RD½PSF 100J
R28	Carbon film	10	½W	RD½PSF 100J
R29	Carbon film	10	½W	RD½PSF 100J
R30	Carbon film	10	½W	RD½PSF 100J
R31	Wire wound	0.5	5W	RT5B 0R5K
R32	Wire wound	0.5	5W	RT5B 0R5K
R33	Wire wound	0.5	5W	RT5B 0R5K
R34	Wire wound	0.5	5W	RT5B 0R5K
R35	Carbon film	10	½W	RD½PSF 100J
R36	Carbon film	10	½W	RD½PSF 100J
R37	Carbon film	10	½W	RD½PS 100J
R38	Carbon film	10	½W	RD½PS 100J
VR1	Semi-fixed	100-B		ACP-019
VR2	Semi-fixed	100-B		ACP-019

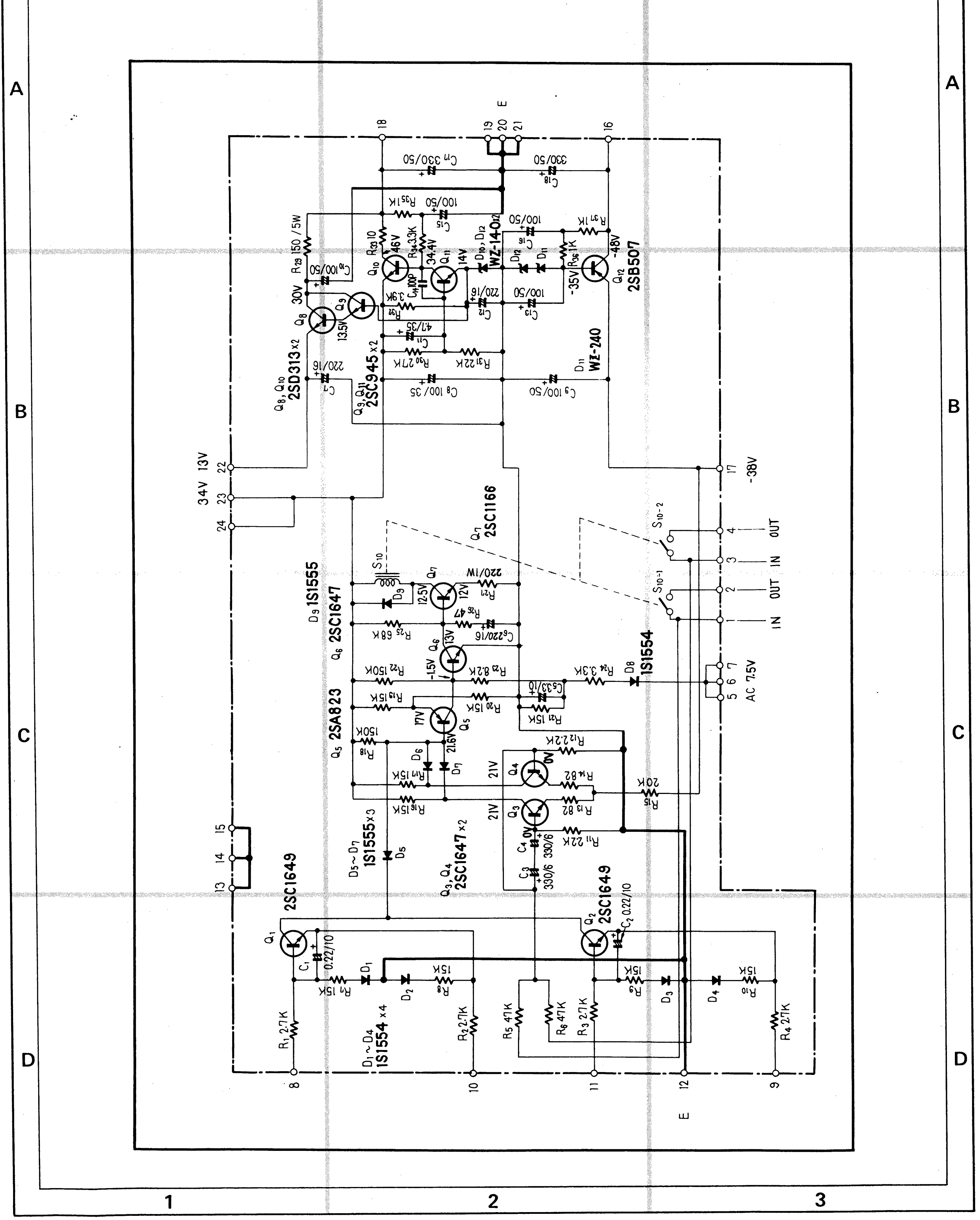
CAPACITORS

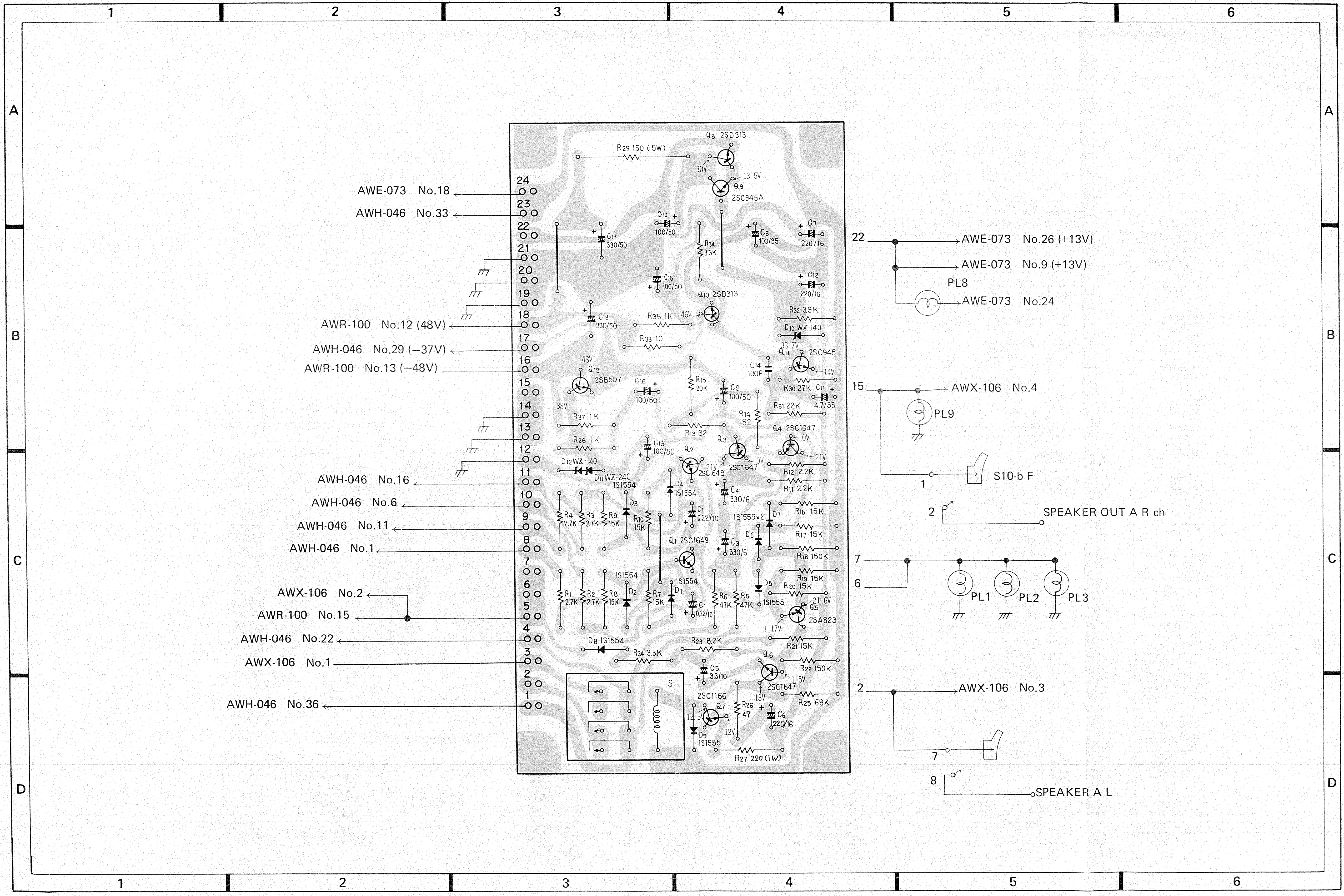
Symbol	Description			Part No.
C1	Electrolytic	1	25V	CSZA 010M 25
C2	Electrolytic	1	25V	CSZA 010M 25
C3	Ceramic	56p	50V	CCDSL 560K 50
C4	Ceramic	56p	50V	CCDSL 560K 50
C5	Ceramic	120p	50V	CCDSL 121K 50
C6	Ceramic	120p	50V	CCDSL 121K 50
C7	Electrolytic	220	6V	CEA 221P 6
C8	Electrolytic	220	6V	CEA 221P 6
C9	Electrolytic	100	35V	CEA 101P 35
C10	Electrolytic	100	35V	CEA 101P 35
C11	Ceramic	15p	50V	CCDSL 150K 50
C12	Ceramic	15p	50V	CCDSL 150K 50
C13	Electrolytic	220	6V	CEA 221P 6
C14	Electrolytic	220	6V	CEA 221P 6
C15	Ceramic	180p	50V	CCDSL 181K 50
C16	Ceramic	180p	50V	CCDSL 181K 50
C17	Ceramic	180p	50V	CCDSL 181K 50
C18	Ceramic	180p	50V	CCDSL 181K 50
C19	Ceramic	0.04	50V	CKDYF 403Z 50
C20	Ceramic	0.04	50V	CKDYF 403Z 50
C21	Ceramic	0.047	50V	CKDYF 473Z 50
C22	Ceramic	0.047	50V	CKDYF 473Z 50
C23	Ceramic	560p	50V	CKDYB 561K 50
C24	Ceramic	560p	50V	CKDYB 561K 50
C25	Metallized mylar	1	100V	ACE-008

OTHERS

Symbol	Description	Part No.
	Heat sink	ANH-117
	AF chock coil 2.2µH	T63-009
	Contact strip (3PL-type)	AKM-018

12.7 POWER SUPPLY & PROTECTION ASSEMBLY (AWR-099)

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AWH-046 No.11
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AWX-106 No.2
AWR-100 No.15
AWH-046 No.22
AWX-106 No.1
AWH-046 No.36
22
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AWE-073 No.9 (+13V)
PL8
AWE-073 No.24
15
AWX-106 No.4
PL9
1
S10-b F
2
SPEAKER OUT A R ch
7
6
PL1
PL2
PL3
2
AWX-106 No.3
7
8
SPEAKER A L
R29 150 (5W)
Q8 2SD313
30V
13.5V
Q9
2SC945A
C10
100/50
C17
330/50
R34
3.3K
C8
100/35
C7
220/16
C15
100/50
C12
220/16
Q10 2SD313
C18
330/50
R35 1K
46V
R32 3.9K
D10 WZ-140
R33 10
33.7V
Q11 2SC945
−48V
Q12
2SB507
C14
100P
−14V
C16
100/50
R15
20K
C9
100/50
R30 27K
C11
4.7/35
−38V
R31 22K
R14
82
R37 1K
R13 82
Q4 2SC1647
0V
R36 1K
C13
100/50
Q3
Q2
−21V
D12 WZ-140
D11 WZ-240
21V
2SC1649
0V
2SC1647
R12 2.2K
1S1554
D4
1S1554
C4
330/6
R11 2.2K
D3
R4 2.7K
R3 2.7K
R9 15K
R10 15K
C1
0.22/10
1S1555×2
D7
R16 15K
D6
R17 15K
Q1 2SC1649
C3
330/6
R18 150K
1S1554
1S1554
R19 15K
D5
R20 15K
R1 2.7K
R2 2.7K
R8 15K
D2
R7 15K
D1
C1
0.22/10
R6 47K
R5 47K
1S1555
21.6V
Q5
2SA823
+17V
R21 15K
D8 1S1554
R23 8.2K
R24 3.3K
Q6
C5
3.3/10
1.5V
R22 150K
S1
2SC1166
2SC1647
13V
R25 68K
Q7
12.5V
R26 47
C6
220/16
12V
D9
1S1555
R27 220 (1W)
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
1
2
3
4
5
6
A
B
C
D

Parts List of Power Supply & Protection Assembly (AWR-099)

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	Transistor	2SC1649-N or 2SC869-C
Q2	Transistor	2SC1649-N or 2SC869-C
Q3	Transistor	2SC1647-P or 2SC945-A
Q4	Transistor	2SC1647-P or 2SC945-A
Q5	Transistor	2SA823-P or 2SA733-Q
Q6	Transistor	2SC1647-P or 2SC945-A
Q7	Transistor	2SC1167-Y or 2SC1384-R
Q8	Transistor	2SD313-D
Q9	Transistor	2SC945-Q
Q10	Transistor	2SD313-D
Q11	Transistor	2SC945-Q
Q12	Transistor	2SB507-D
D1	Diode	1S1554
D2	Diode	1S1554
D3	Diode	1S1554
D4	Diode	1S1554
D5	Diode	1S1555
D6	Diode	1S1555
D7	Diode	1S1555
D8	Diode	1S1554
D9	Diode	1S1555
D10	Zener diode	WZ-140
D11	Zener diode	WZ-240
D12	Zener diode	WZ-140

RESISTORS

Symbol	Description			Part No.
R1	Carbon film	2.7k		RD¼PS 272J
R2	Carbon film	2.7k		RD¼PS 272J
R3	Carbon film	2.7k		RD¼PS 272J
R4	Carbon film	2.7k		RD¼PS 272J
R5	Carbon film	47k		RD¼PS 473J
R6	Carbon film	47k		RD¼PS 473J
R7	Carbon film	15k		RD¼PS 153J
R8	Carbon film	15k		RD¼PS 153J
R9	Carbon film	15k		RD¼PS 153J
R10	Carbon film	15k		RD¼PS 153J
R11	Carbon film	2.2k		RD¼PS 222J
R12	Carbon film	2.2k		RD¼PS 222J
R13	Carbon film	82		RD¼PS 820J
R14	Carbon film	82		RD¼PS 820J
R15	Carbon film	20k		RD¼PS 203J
R16	Carbon film	15k		RD¼PS 153J
R17	Carbon film	15k		RD¼PS 153J
R18	Carbon film	150k		RD¼PS 154J
R19	Carbon film	15k		RD¼PS 153J
R20	Carbon film	15k		RD¼PS 153J
R21	Carbon film	15k		RD¼PS 153J
R22	Carbon film	150k		RD¼PS 154J
R23	Carbon film	8.2k		RD¼PS 822J
R24	Carbon film	3.3k		RD¼PS 332J
R25	Carbon film	68k		RD¼PS 683J
R26	Carbon film	47		RD¼PS 470J
R27	Metal oxide	220	1W	RS1P 221K
R28				
R29	Wire wound	150	5W	RT5B 151K
R30	Carbon film	27k		RD¼PS 273J
R31	Carbon film	22k		RD¼PS 223J
R32	Carbon film	3.9k		RD¼PS 392J
R33	Carbon film	33	½W	RD½PSF 330J
R34	Carbon film	3.3k		RD¼PS 332J
R35	Carbon film	1k		RD¼PS 102J
R36	Carbon film	1k		RD¼PS 102J
R37	Carbon film	1k		RD¼PS 102J

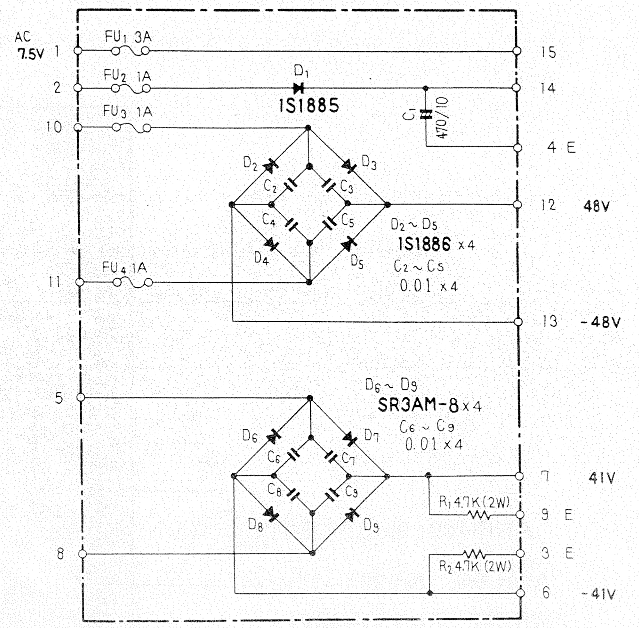
CAPACITORS

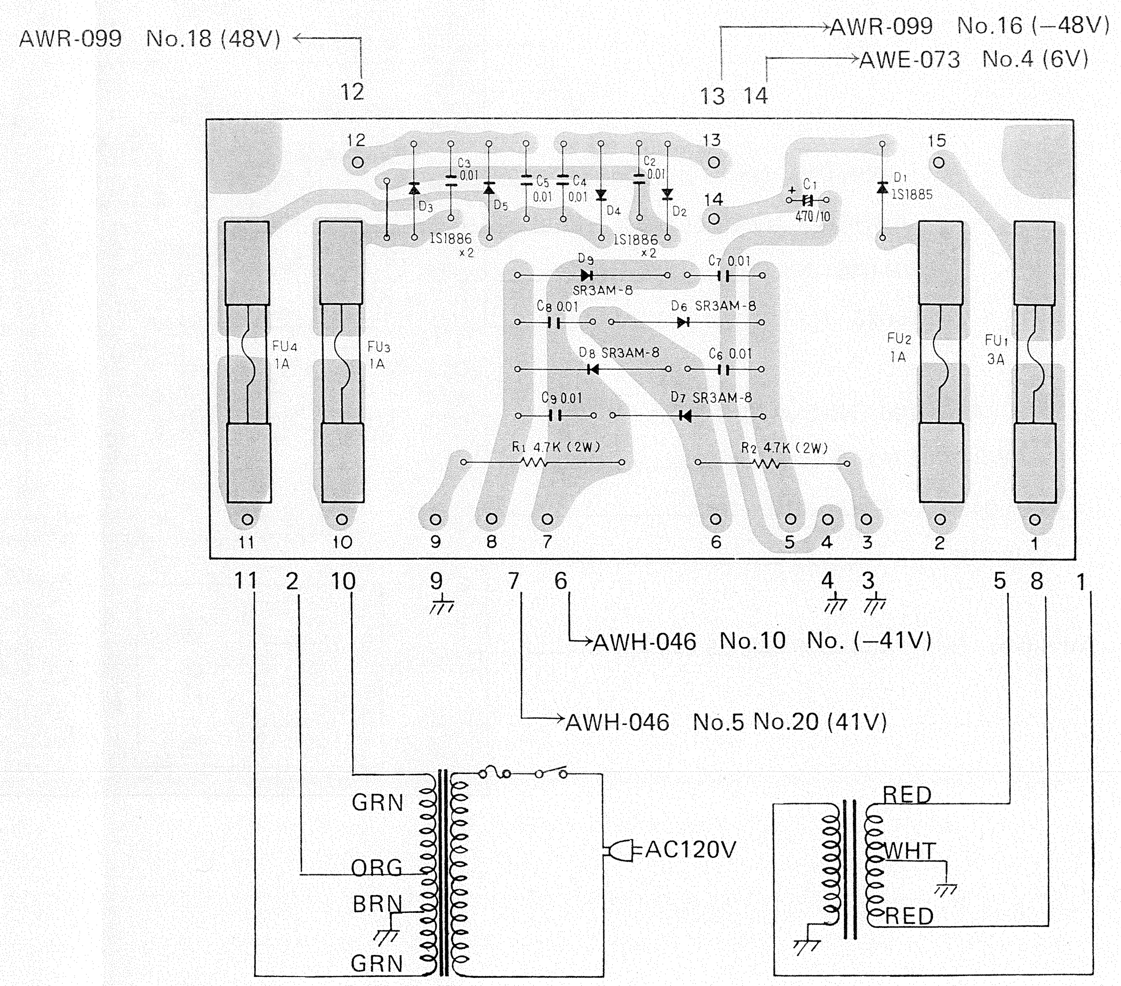
Symbol	Description			Part No.
C1	Electrolytic	0.22	10V	CSSA R22M 10
C2	Electrolytic	0.22	10V	CSSA R22M 10
C3	Electrolytic	330	6V	CEA 331P 6
C4	Electrolytic	330	6V	CEA 331P 6
C5	Electrolytic	3.3	10V	CEA 3R3P 10
C6	Electrolytic	220	16V	CEA 221P 16
C7	Electrolytic	220	16V	CEA 221P 16
C8	Electrolytic	100	35V	CEA 101P 35
C9	Electrolytic	100	50V	CEA 101P 50
C10	Electrolytic	100	50V	CEA 101P 50
C11	Electrolytic	4.7	35V	CEA 4R7P 35
C12	Electrolytic	220	16V	CEA 221P 16
C13	Electrolytic	110	35V	CEA 101P 35
C14	Ceramic	100p	50V	CCDSL 101K 50
C15	Electrolytic	100	50V	CEA 101P 50
C16	Electrolytic	100	50V	CEA 101P 50
C17	Electrolytic	330	50V	CEA 331P 50
C18	Electrolytic	330	50V	CEA 331P 50

OTHERS

Symbol	Description	Part No.
	Heat sink	ANH-117-0
	Heat sink	ANH-259-0
	Relay	ASR-018

12.8 POWER SUPPLY ASSEMBLY (AWR-100)


AC
7.5V
1
2
10
11
5
8
FU1 3A
FU2 1A
FU3 1A
FU4 1A
D1
1S1885
C1
470/10
D2
D3
D4
D5
C2
C3
C4
C5
D2 ~ D5
1S1886 x4
C2 ~ C5
0.01 x4
D6 ~ D9
SR3AM-8 x4
C6 ~ C9
0.01 x4
D6
D7
D8
D9
C6
C7
C8
C9
R1 4.7K (2W)
R2 4.7K (2W)
15
14
4 E
12 48V
13 -48V
7 41V
9 E
3 E
6 -41V


AWR-099 No.18 (48V)
12
AWR-099 No.16 (−48V)
AWE-073 No.4 (6V)
13 14
12
13
14
15
C3 0.01
C5 0.01
C4 0.01
C2 0.01
D3
D5
D4
D2
1S1886 x2
1S1886 x2
C1 470/10
D1 1S1885
D9 SR3AM-8
C7 0.01
C8 0.01
D6 SR3AM-8
D8 SR3AM-8
C6 0.01
C9 0.01
D7 SR3AM-8
R1 4.7K (2W)
R2 4.7K (2W)
FU4 1A
FU3 1A
FU2 1A
FU1 3A
11
10
9
8
7
6
5
4
3
2
1
11 2 10 9 7 6 4 3 5 8 1
AWH-046 No.10 No. (−41V)
AWH-046 No.5 No.20 (41V)
GRN
ORG
BRN
GRN
AC120V
RED
WHT
RED

Parts List of Power Supply Assembly (AWR-100)

SEMICONDUCTORS

Symbol	Description	Part No.
D1	Diode	1S1885
D2	Diode	1S1886
D3	Diode	1S1886
D4	Diode	1S1886
D5	Diode	1S1886
D6	Diode	SR3AM-8
D7	Diode	SR3AM-8
D8	Diode	SR3AM-8
D9	Diode	SR3AM-8

RESISTORS

Symbol	Description			Part No.
R1	Metal oxide	4.7k	2W	RS2P 472K
R2	Metal oxide	4.7k	2W	RS2P 472K

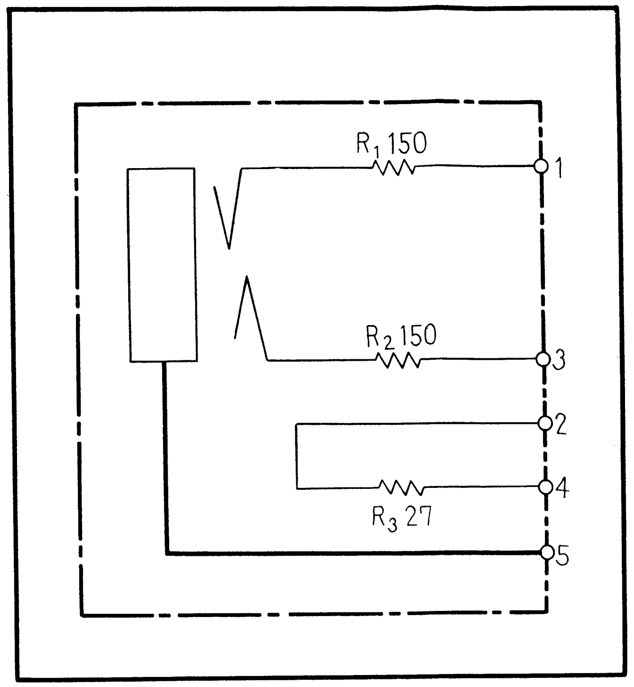
CAPACITORS

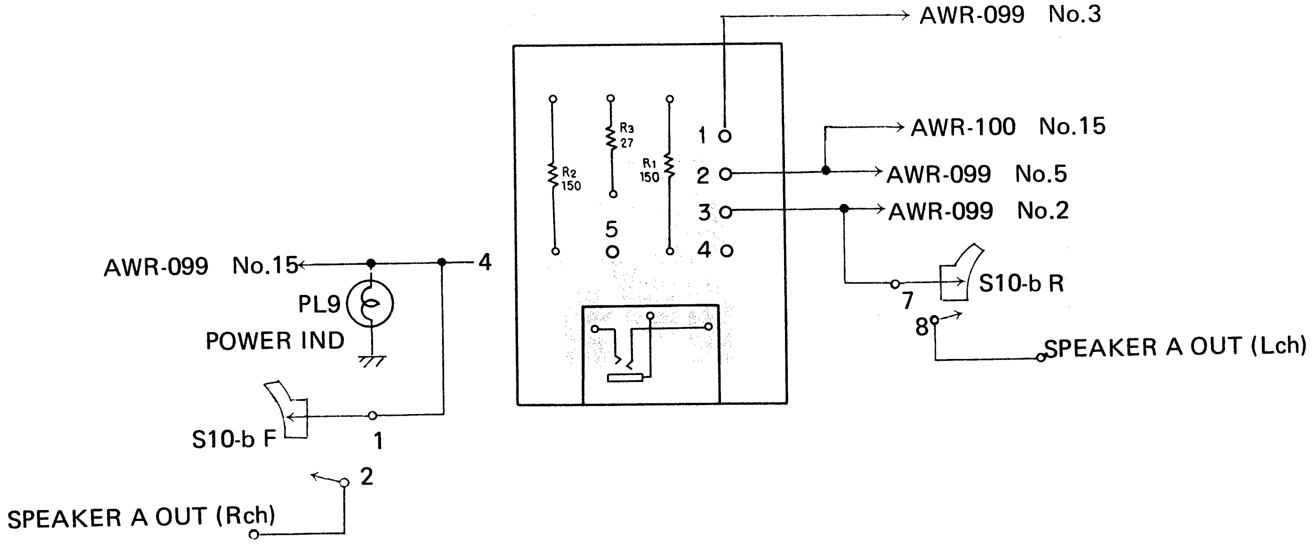
Symbol	Description			Part No.
C1	Electrolytic	470	10V	CEA 471P 10
C2	Electrolytic	0.01	250V	ACG-001
C3	Electrolytic	0.01	250V	ACG-001
C4	Electrolytic	0.01	250V	ACG-001
C5	Electrolytic	0.01	250V	ACG-001
C6	Electrolytic	0.01	250V	ACG-001
C7	Electrolytic	0.01	250V	ACG-001

OTHERS

Symbol	Description	Part No.
	Fuse clip	AKR-013
	Fuse clip	AKR-030

12.9 HEADPHONE JACK ASSEMBLY (AWX-106)


R1 150
1
R2 150
3
2
4
R3 27
5

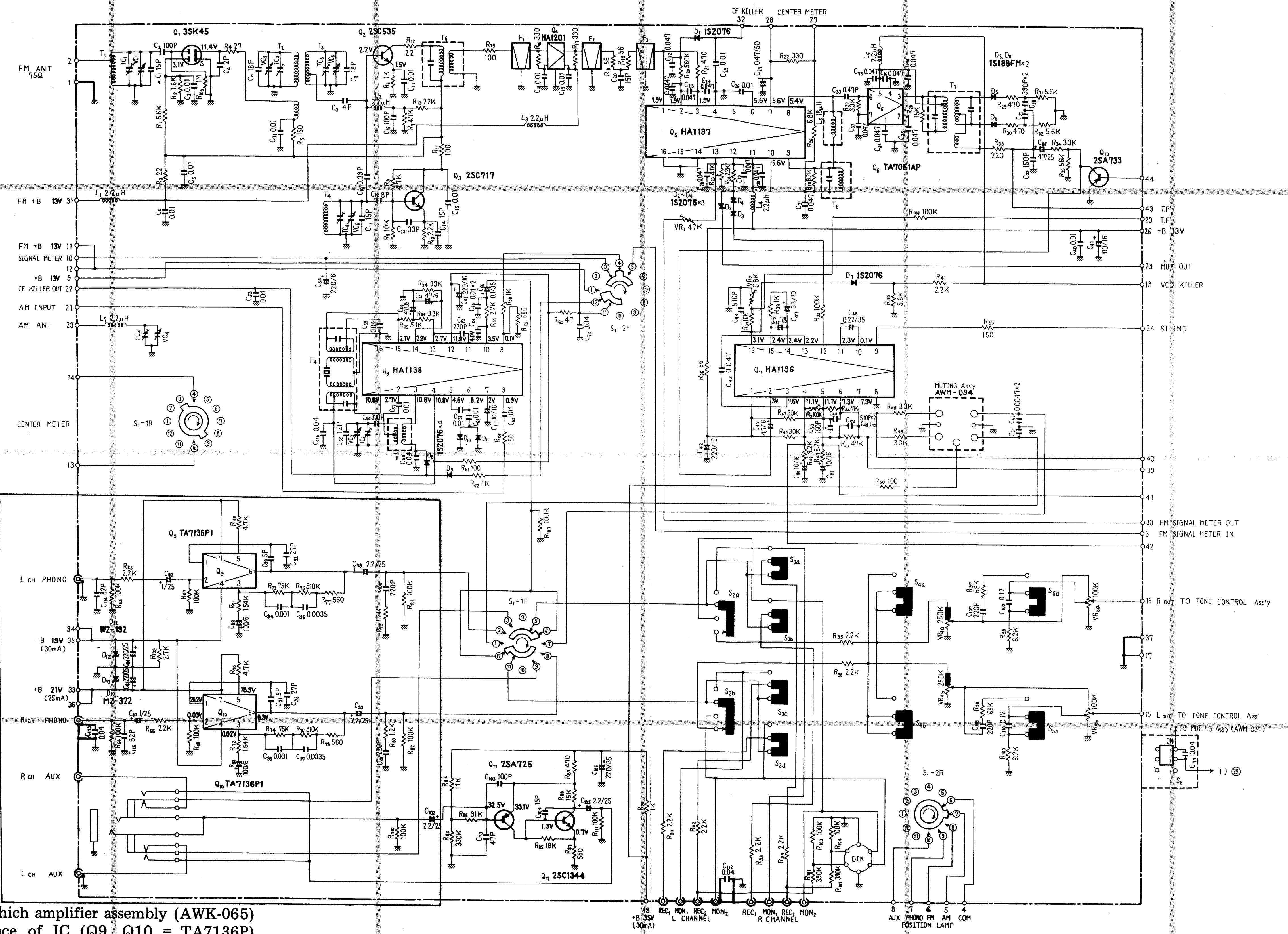

AWR-099 No.3
R3 27
R2 150
R1 150
1
2
3
4
5
AWR-100 No.15
AWR-099 No.5
AWR-099 No.2
S10-b R
7
8
SPEAKER A OUT (Lch)
AWR-099 No.15
4
PL9
POWER IND
S10-b F
1
2
SPEAKER A OUT (Rch)

Parts List of Headphones Jack Assembly (AWX-106)

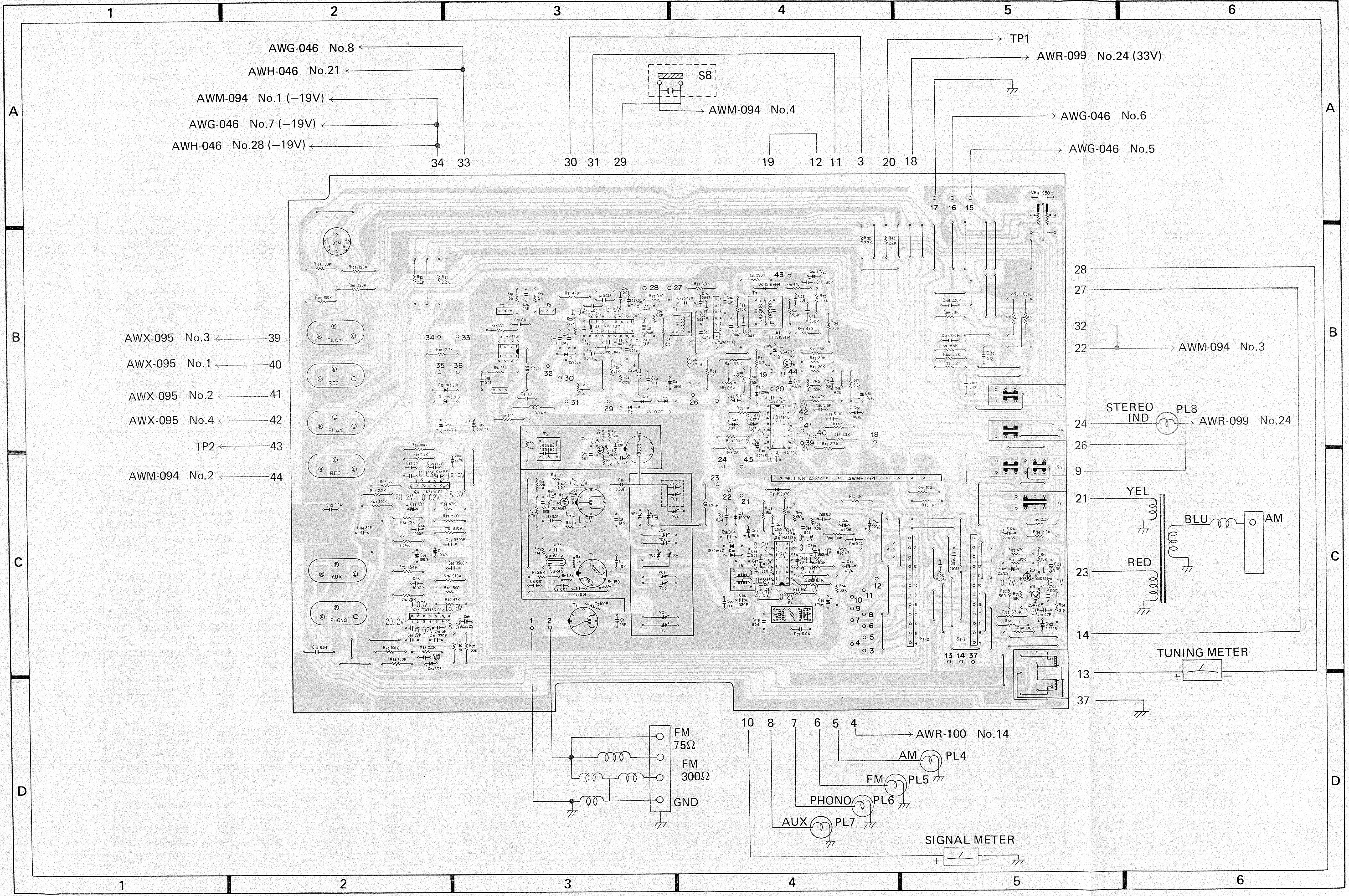
RESISTORS

Symbol	Description			Part No.
R1	Metal oxide	150	2W	RS 2P 151J
R2	Metal oxide	150	2W	RS 2P 151J
R3	Carbon film	27		RD¼PS 270J

12.10 TUNER, AF, & CONTROL ASSEMBLY (AWE-073)


1
2
3
4
5
6
A
B
C
D
IF KILLER
CENTER METER
Q1 3SK45
Q2 2SC535
Q3 2SC717
Q4 HA1201
Q5 HA1137
Q6 TA7061AP
Q7 HA1136
Q8 HA1138
Q9 TA7136P1
Q10 TA7136P1
Q11 2SA725
Q12 2SC1344
Q13 2SA733
D1 1S2076
D2~D4 1S2076×3
D5, D6 1S188FM×2
D7 1S2076
1S2076×4
D12 WZ-192
D13 MZ-322
VR1 47K
MUTING Ass'y AWM-094
FM ANT 75Ω
FM +B 13V
FM +B 13V
SIGNAL METER
+B 13V
IF KILLER OUT
AM INPUT
AM ANT
CENTER METER
S1-1R
S1-2F
S1-1F
S1-2R
L CH PHONO
-B 19V (30mA)
+B 21V (25mA)
R CH PHONO
R CH AUX
L CH AUX
44
43 T.P
20 T.P
26 +B 13V
25 MUT OUT
19 VCO KILLER
24 ST IND
40
39
41
30 FM SIGNAL METER OUT
3 FM SIGNAL METER IN
42
16 R out TO TONE CONTROL Ass'y
37
17
15 L out TO TONE CONTROL Ass'y
TO MUTING Ass'y (AWM-094)
TO ㉓
S6
ON
DIN
18 +B 35V (30mA)
REC1 MON1 REC2 MON2 L CHANNEL
REC1 MON1 REC2 MON2 R CHANNEL
8 AUX
7 PHONO
6 FM
5 AM
4 COM
POSITION LAMP

For units in which amplifier assembly (AWK-065) is used in place of IC (Q9, Q10 = TA7136P) indicated by red line, see Page 73.


AWG-046 No.8
AWH-046 No.21
AWM-094 No.1 (−19V)
AWG-046 No.7 (−19V)
AWH-046 No.28 (−19V)
S8
AWM-094 No.4
TP1
AWR-099 No.24 (33V)
AWG-046 No.6
AWG-046 No.5
AWX-095 No.3
AWX-095 No.1
AWX-095 No.2
AWX-095 No.4
TP2
AWM-094 No.2
AWM-094 No.3
STEREO IND
PL8
AWR-099 No.24
YEL
BLU
AM
RED
TUNING METER
FM 75Ω
FM 300Ω
GND
AWR-100 No.14
AM
PL4
FM
PL5
PHONO
PL6
AUX
PL7
SIGNAL METER
MUTING ASSY
PLAY
REC
AUX
PHONO
DIN
1
2
3
4
5
6
A
B
C
D

Parts List of Tuner, AF & Control Assembly (AWE-073)

SEMICONDUCTORS

Symbol	Description	Part No.
Q1	FET	3SK45-B
Q2	Transistor	2SC535-B
Q3	Transistor	2SC717
Q4	IC	HA1201
Q5	IC	HA1137
Q6	IC	TA7061AP
Q7	IC	HA1196
Q8	IC	HA1138
Q9	IC	TA7136 P1
Q10	IC	TA7136 P1
Q11	Transistor	2SA725-G
Q12	Transistor	2SC1344-D or 2SC1345-D
Q13	Transistor	2SA733-Q
D1	Diode	1S2076
D2	Diode	1S2076
D3	Diode	1S2076
D4	Diode	1S2076
D5	Diode	1S188FM-1
D6	Diode	1S188FM-1
D7	Diode	1S2076
D8	Diode	1S2076
D9	Diode	1S2076
D10	Diode	1S2076
D11	Diode	1S2076
D12	Zener Diode	WZ-192
D13	Zener Diode	WZ-210

SWITCHES

Symbol	Description	Part No.
S1	Rotary switch (FUNCTION)	ASD-049
S2	Lever switch (TAPE MONITOR)	ASK-102
S3	Lever switch (DUPLICATE)	ASK-092
S4	Lever switch (MODE)	ASK-090
S5	Lever switch (MODE)	ASK-090
S6	Push switch (FM MUTING)	ASG-097

TRANSFORMERS, COILS

Symbol	Description	Part No.
T1	FM antenna coil	ATC-021
T2	FM RF coil	ATC-015
T3	FM RF coil	ATC-016
T4	FM O, S, C coil	ATC-022
T5	FM IF transformer	ATE-026
T6	FM IF transformer	ATE-027
T7	FM IF transformer	ATE-013
T8	AM O, S, C coil	ATB-013
F1	FM ceramic filter	ATF-013
F2	FM Ceramic filter	ATF-013
F3	FM Ceramic filter	ATF-013
F4	AM Ceramic filter	ATF-027
L1	RF Choke coil 2.2μH	T24-028
L2	RF Choke coil 2.2μH	T24-028
L3	RF Choke coil 2.2μH	T24-028
L4	RF Choke coil 2.2μH	T24-028
L5	Choke coil 18μH	ATH-007
L6	RF Choke coil 2.2μH	T24-028
L7	RF Choke coil 2.2μH	T24-028

RESISTORS

Symbol	Description	Part No.
R1	Carbon film 5.6k	RD¼PS 562J
R2	Carbon film 1.8k	RD¼VS 182J
R3	Carbon film 22	RD¼PS 220J
R4	Carbon film 27	RD¼VS 270J
R5	Carbon film 150	RD¼VS 151J
R6	Carbon film 1k	RD¼PS 102J
R7	Carbon film 4.7k	RD¼PS 472J
R8	Carbon film 10k	RD¼VS 103J
R9	Carbon film 4.7k	RD¼VS 472J
R10	Carbon film 2.2k	RD¼VS 222J
R11	Carbon film 100	RD¼PS 101J
R12	Carbon film 22	RD¼VS 220J
R13	Carbon film 22k	RD¼VS 223J
R15	Carbon film 100	RD¼PS 101J
R16	Carbon film 330	RD¼PS 331J
R17	Carbon film 330	RD¼PS 331J
R18	Carbon film 56	RD¼PM 560J
R19	Carbon film 56	RD¼PM 560J
R20	Carbon film 560k	RD¼PS 564J
R21	Carbon film 470	RD¼PS 471J
R22	Carbon film 330	RD¼PM 331J
R23	Carbon film 47k	RD¼PS 473J
R24	Carbon film 2.2k	RD¼PS 222J
R25	Carbon film 8.2k	RD¼PS 822J
R26	Carbon film 6.8k	RD¼PS 682J
R27	Carbon film 3.3k	RD¼PS 332J
R28	Carbon film 15k	RD¼PS 153J
R29	Carbon film 470	RD¼PM 471J
R30	Carbon film 470	RD¼PM 471J
R31	Carbon film 5.6k	RD¼PM 562J
R32	Carbon film 5.6k	RD¼PM 562J
R33	Carbon film 220	RD¼PS 221J
R34	Carbon film 3.3k	RD¼PS 332J
R35	Carbon film 56k	RD¼PS 563J
R36	Carbon film 56	RD¼PS 560J
R37	Carbon film 16k	RD¼PS 163J
R38	Carbon film 1k	RD¼PS 102J
R39	Carbon film 100k	RD¼PS 104J
R40	Carbon film 5.6k	RD¼PS 562J
R41	Carbon film 2.2k	RD¼PS 222J
R42	Carbon film 30k	RD¼PS 303J
R43	Carbon film 30k	RD¼PS 303J
R44	Carbon film 47k	RD¼PS 473G
R45	Carbon film 47k	RD¼PS 473G
R46	Carbon film 8.2k	RD¼PS 822J
R47	Carbon film 8.2k	RD¼PS 822J
R48	Carbon film 3.3k	RD¼PS 332J
R49	Carbon film 3.3k	RD¼PS 332J
R50	Carbon film 100	RD¼PS 101J
R51	....	....
R52	....	....
R53	Carbon film 150	RD¼PS 151J
R54	Carbon film 39k	RD¼PS 393J
R55	Carbon film 5.1k	RD¼PS 512J
R56	Carbon film 3.3k	RD¼PS 332J
R57	Carbon film 2.2k	RD¼PS 222J
R58	Carbon film 1k	RD¼PS 102J
R59	Carbon film 680	RD¼PS 681J
R60	Carbon film 47	RD¼PS 470J
R61	Carbon film 100	RD¼PS 101J
R62	Carbon film 1k	RD¼PS 102J
R63	Carbon film 100k	RD¼PS 104J
R64	Carbon film 100k	RD¼PS 104J
R65	Carbon film 2.2k	RD¼PS 222J
R66	Carbon film 2.2k	RD¼PS 222J
R67	Carbon film 100k	RD¼PS 100K
R68	Carbon film 100K	RD¼PS 100K
R69	Carbon film 47k	RD¼PS 473J
R70	Carbon film 47k	RD¼PS 473J
R71	Metal film 1.54k	RN¼PT 1541F
R72	Metal film 1.54k	RN¼PT 1541F
R73	Metal film 75k	RN¼PT 7502F
R74	Metal film 75k	RN¼PT 7502F
R75	Metal film 910k ½W	RN½PT 9103F
R76	Metal film 910k ½W	RN½PT 9103F
R77	Carbon film 560	RD¼PS 561J
R78	Carbon film 560	RD¼PS 561J
R79	Carbon film 1.2k	RD¼PS 122J
R80	Carbon film 1.2k	RD¼PS 122J
R81	Carbon film 100k	RD¼PS 104J
R82	Carbon film 100k	RD¼PS 104J
R83	Carbon film 330k	RD¼PS 334J
R84	Carbon film 11k	RD¼PS 113J
R85	Carbon film 18k	RD¼PM 183J
R86	Carbon film 91k	RD¼PS 913J
R87	Carbon film 560	RD¼PS 561J
R88	Carbon film 15k	RD¼PM 153J
R89	Carbon film 470	RD¼PS 471J
R90	Carbon film 1k	RD¼PS 102J
R91	Carbon film 2.2k	RD¼PS 222J
R92	Carbon film 2.2k	RD¼PS 222J
R93	Carbon film 2.2k	RD¼PS 222J
R94	Carbon film 2.2k	RD¼PS 222J
R95	Carbon film 2.2k	RD¼PS 222J
R96	Carbon film 2.2k	RD¼PS 222J
R97	Carbon film 68k	RD¼PS 683J
R98	Carbon film 68k	RD¼PS 683J
R99	Carbon film 6.2k	RD¼PS 622J
R100	Carbon film 6.2k	RD¼PS 622J
R101	Carbon film 390k	RD¼PS 394J
R102	Carbon film 390k	RD¼PS 394J
R103	Carbon film 100k	RD¼PS 104J
R104	Carbon film 100k	RD¼PS 104J
R105	Carbon film 1M	RD¼PS 105J
R106	Carbon film 150	RD¼PS 151J
R107	Carbon film 100k	RD¼PS 104J
R108	Carbon film 100k	RD¼PM 104J
R109	Carbon film 2.7k	RD¼PS 272J
R110	Carbon film 100k	RD¼PS 104J
R111	....	....

CAPACITORS

Symbol	Description	Part No.
C1	Ceramic 15p 50V	CCDSH 150K 50
C2	Ceramic 100p 50V	CCDSL 101K 50
C3	Ceramic 0.01 50V	CKDYF 103Z 50
C4	Ceramic 2p 50V	CCDSL 020C 50
C5	Ceramic 0.01 50V	CKDYF 103Z 50
C6	Ceramic 0.01 50V	CKDYF 103Z 50
C7	Ceramic 18p 50V	CCDSH 180K 50
C8	Ceramic 18p 50V	CCDSH 180K 50
C9	Ceramic 4p 50V	CCDSL 040D 50
C10	Ceramic 0.39p 500V	CGB R39K 500
C11	Ceramic 15p 50V	CCDRH 150K 50
C12	Ceramic 8p 50V	CCDCH 080F 50
C13	Ceramic 33p 50V	CCDCH 330K 50
C14	Ceramic 15p 50V	CCDCH 150K 50
C15	Ceramic 0.01 50V	CKDYB 103K 50
C16	Ceramic 100p 50V	CCDSL 101K 50
C17	Ceramic 0.01 50V	CKDYF 103Z 50
C18	Ceramic 0.01 50V	CKDYF 103Z 50
C19	Ceramic 0.01 50V	CKDYF 103Z 50
C20	Ceramic 15p 50V	CCDSL 150K 50
C21	Ceramic 0.047 25V	CKDBC 473Z 25
C22	Ceramic 0.047 25V	CKDBC 473Z 25
C23	Ceramic 0.047 25V	CKDBC 473Z 25
C24	Ceramic 0.047 25V	CKDBC 473Z 25
C25	Ceramic 0.01 50V	CKDYF 103Z 50

Symbol	Description			Part No.
C26	Ceramic	0.01	50V	CKDYF 103Z 50
C27	Electrolytic	0.47	50V	CEA R47P 50
C28	Ceramic	0.047	25V	CKDBC 473Z 25
C29	Ceramic	0.047	25V	CKDBC 473Z 25
C30	Ceramic	0.047	25V	CKDBC 473Z 25
C31	Ceramic	0.047	25V	CKDBC 473Z 25
C32	Ceramic	0.047	25V	CKDBC 473Z 25
C33	Ceramic	0.47p	500V	CGB R47K 500
C34	Ceramic	0.047	25V	CKDBC 473Z 25
C35	Ceramic	0.047	25V	CKDBC 473Z 25
C36	Ceramic	0.047	25V	CKDBC 473Z 25
C37	Ceramic	390p	50V	CKDYB 391K 50
C38	Ceramic	390p	50V	CKDYB 391K 50
C39	Ceramic	150p	50V	CCDSL 151K 50
C40	Ceramic	0.01	50V	CKDYF 103Z 50
C41	Electrolytic	100	16V	CEA 101P 16
C42	Electrolytic	220	16V	CEA 221P 16
C43	Mylar	0.047	50V	CQMA 473K 50
C44	Polystyrene	510p	50V	CQSH 511J 50
C45	Electrolytic	4.7	16V	CSZA 4R7M 16
C46	Electrolytic	1	25V	CSZA 010M 25
C47	Electrolytic	3.3	10V	CSZA 3R3M 10
C48	Electrolytic	0.22	35V	CSZA R22M 35
C49	Polystyrene	510p	50V	CQSA 511J 50
C50	Polystyrene	510p	50V	CQSA 511J 50
C51	Mylar	0.0047	50V	CQMA 472J 50
C52	Mylar	0.0047	50V	CQMA 472J 50
C53	Ceramic	0.04	50V	CKDYF 403Z 50
C54	Electrolytic	220	6V	CEA 221P 6
C55	Ceramic	12p	50V	CCDXL 120K 50
C56	Polystyrene	330p	50V	CQSA 331J 50
C57	Ceramic	0.01	50V	CKDYF 103Z 50
C58	Ceramic	0.04	50V	CKDYF 403Z 50
C59	Ceramic	0.04	50V	CKDYF 403Z 50
C60	Electrolytic	4.7	35V	CEA 4R7P 35
C61	Electrolytic	47	6V	CEA 470P 6
C62	Electrolytic	220	16V	CEA 221P 16
C63	Ceramic	220p	50V	CCDSL 221K 50
C64	Ceramic	0.01	50V	CKDYF 103Z 50
C65	Ceramic	0.01	50V	CKDYF 103Z 50
C66	Electrolytic	0.1	35V	CSZA 0R1M 35
C67	Ceramic	0.01	50V	CKDYF 103Z 50
C68	Ceramic	0.01	50V	CKDYF 103Z 50
C69	Ceramic	0.04	50V	CKDYF 403Z 50
C70	Ceramic	0.04	50V	CKDYF 403Z 50
C71	Ceramic	0.01	50V	CKDYF 103Z 50
C72	Ceramic	150p	50V	CCDSL 151K 50
C73	Ceramic	47p	50V	CCDSL 470K 50
C74	Ceramic	0.04	50V	CKDYF 403Z 50
C75	Ceramic	0.047	25V	CKDBC 473Z 25
C76	Ceramic	0.047	25V	CKDBC 473Z 25
C80	Electrolytic	10	16V	CEA 100P 16
C81	Electrolytic	10	16V	CEA 100P 16
C82	Electrolytic	1	25V	CSZA 010M 25
C83	Electrolytic	1	25V	CSZA 010M 25
C84	Electrolytic	220	25V	CEA 221P 25
C85	Electrolytic	220	25V	CEA 221P 25
C86	Electrolytic	4.7	16V	CEANL 4R7M16NP
C88	Electrolytic	100	6V	CEA 101P 6
C89	Electrolytic	100	6V	CEA 101P 6
C90	Ceramic	5p	50V	CCDSL 050D 50
C91	Ceramic	5p	50V	CCDSL 050D 50
C92	Ceramic	27p	50V	CCDSL 270K 50
C93	Ceramic	27p	50V	CCDSL 270K 50
C94	Polystyrene	1000p	50V	CQSA 102G 50
C95	Polystyrene	1000P	50V	CQSA 102G 50
C96	Polystyrene	3500p	50V	CQSA 352G 50
C97	Polystyrene	3500p	50V	CQSA 352G 50
C98	Electrolytic	2.2	25V	CSZA 2R2M 25
C99	Electrolytic	2.2	25V	CSZA 2R2M 25
C100	Ceramic	220p	50V	CCDSL 221K 50
C101	Ceramic	220p	50V	CCDSL 221K 50
C102	Electrolytic	2.2	25V	CSZA 2R2M 25
C103	Ceramic	100p	50V	CCDSL 101K 50
C104	Ceramic	15p	50V	CCDSL 150K 50
C105	Electrolytic	2.2	25V	CSZA 2R2M 25
C106	Electrolytic	220	35V	CEA 221P 35
C107	Ceramic	220p	50V	CCDSL 221K 50
C108	Ceramic	220p	50V	CCDSL 221K 50
C109	Mylar	0.12	50V	CQMA 124K 50
C110	Mylar	0.12	50V	CQMA 124K 50
C111	Electrolytic	10	16V	CEA 100P 16
C112	Ceramic	0.04	50V	CKDYF 403Z 50
C113	Ceramic	0.04	50V	CKDYF 403Z 50
C114	Ceramic	82p	50V	CCDSL 820K 50
C115	Ceramic	82p	50V	CCDSL 820K 50
C116	Ceramic	0.04	50V	CKDYF 403Z 50
VC1	Tunning capacitor			ACK-015
TC6	Ceramic trimmer			ACM-006

VARIABLE RESISTORS, OTHERS

Symbol	Description		Part No.
VR1	Semi-fixed	47k-B	C92-048
VR2	Semi-fixed	4.7k-B	ACP-055
VR3	Semi-fixed	100k-B	C92-047
VR4	Variable resistor	(BALANCE)	ACV-135
VR5	Variable resistor	(VOLUME)	ACV-179

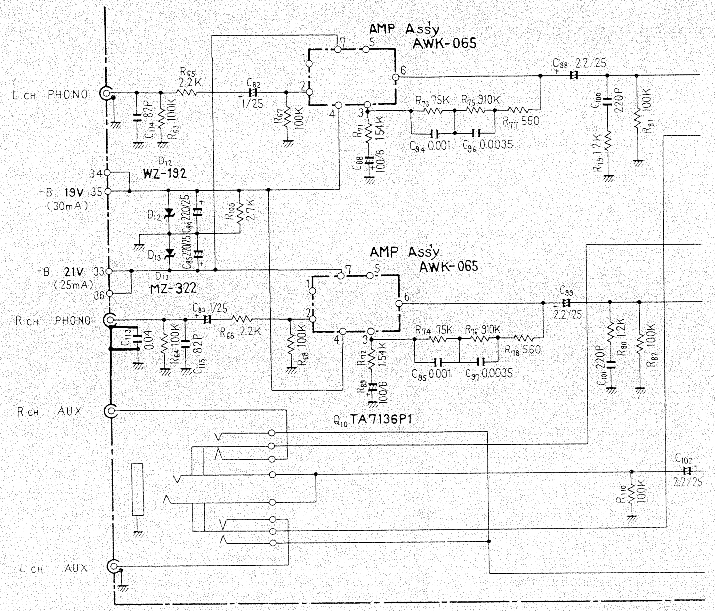
OTHERS

	Terminal	(TAPE 1)	AKB-027
		(TAPE 2)	AKB-027
		(INPUT)	AKB-027
	Connector socket	(REC/PLAY)	AKP-011
	Phone jack	(MIC)	AKN-011

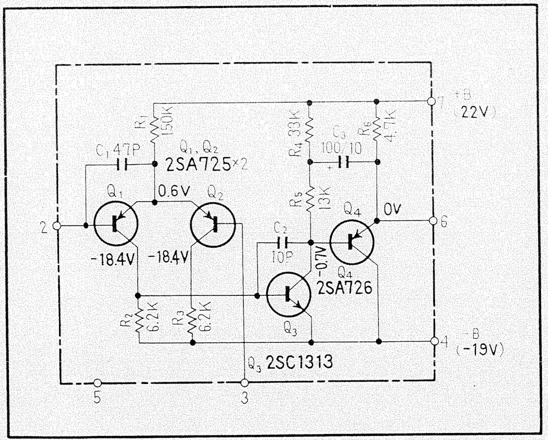
Symbol	Description	Part No.
	Nut	B71-004
	Washer	ABE-001
	Screw	ABA-121

12.11 AMPLIFIER ASSEMBLY (AWK-065)

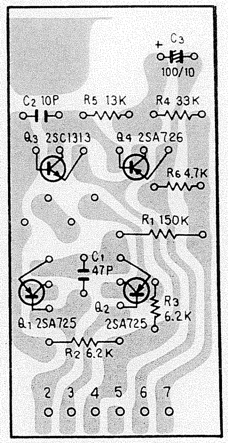
Tuner, AF & Control assembly (AWE-073)


AMP Ass'y
AWK-065
L CH PHONO
R65 2.2K
C82 1/25
R67 100K
C114 82P
R63 100K
C98 2.2/25
R73 75K
R75 910K
R77 560
R71 1.54K
C88 100/6
C94 0.001
C96 0.0035
C100 220P
R79 1.2K
R81 100K
D12 WZ-192
-B 19V (30mA)
D12
D13
C84 220/25
C85 220/25
R109 2.7K
+B 21V (25mA)
D13 MZ-322
R CH PHONO
C113 0.04
R64 100K
C115 82P
C83 1/25
R66 2.2K
R68 100K
R74 75K
R76 910K
R78 560
R72 1.54K
R89 100/6
C95 0.001
C97 0.0035
C99 2.2/25
C101 220P
R80 1.2K
R82 100K
Q10 TA7136P1
R CH AUX
L CH AUX
C102 2.2/25
R110 100K
1
2
3
4
5
6
7
33
34
35
36

AWK-065 circuit diagram


+B (22V)
-B (-19V)
R1 150K
C1 47P
Q1, Q2 2SA725×2
Q1
Q2
0.6V
-18.4V
-18.4V
R2 6.2K
R3 6.2K
R4 33K
C3 100/10
R6 4.7K
R5 13K
C2 10P
-0.7V
Q4
0V
Q4 2SA726
Q3
Q3 2SC1313
2
3
4
5
6
7

AWK-065 PCB


C3
100/10
C2 10P
R5 13K
R4 33K
Q3 2SC1313
Q4 2SA726
R6 4.7K
R1 150K
C1 47P
Q1 2SA725
Q2
2SA725
R3 6.2K
R2 6.2K
2 3 4 5 6 7

Parts List of Amplifier Assembly (AWK-065)

SEMICONDUCTORS

Symbol	Descripton	Part No.
Q1	Transistor	2SA725-G (2SA640-E)
Q2	Transistor	2SA725-G (2SA640-E)
Q3	Transistor	2SC1313-G
Q4	Transistor	2SA726-G$_2$ (2SA640-E)

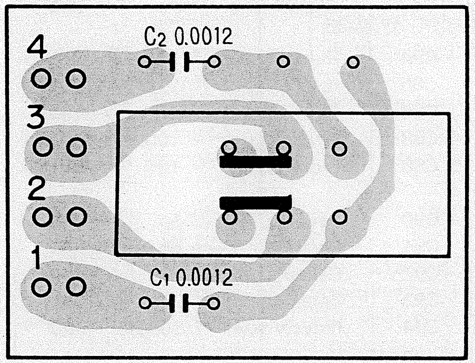
RESISTORS

Symbol	Description		Part No.
R1	Carbon film	150k	RD¼VS 154J NL
R2	Carbon film	6.2k	RD¼VS 622J
R3	Carbon film	6.2k	RD¼VS 622J
R4	Carbon film	33k	RD¼VS 333J
R5	Carbon film	13k	RD¼VS 133J
R6	Carbon film	4.7k	RD¼VS 472J

CAPACITORS

Symbol	Description			Part No.
C1	Ceramic	47p	50V	CCDSL 470K 50
C2	Ceramic	10p	50V	CCDSL 100K 50
C3	Electrolytic	100	10V	CEA 101P 10

12.12 DE-EMPHASIS SWITCH ASSEMBLY (AWX-095)

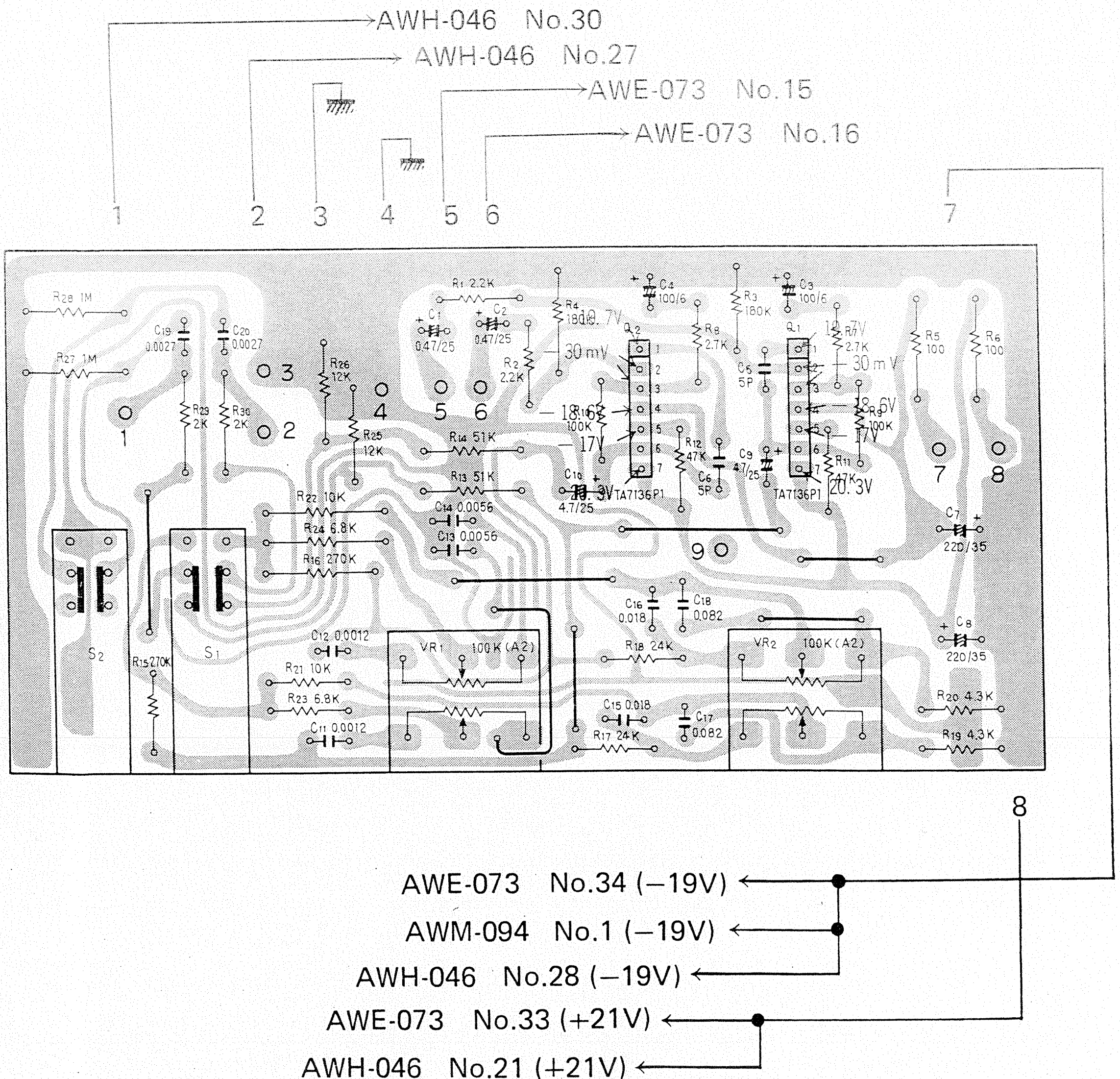

4
3
2
1
C2 0.0012
C1 0.0012

Parts List of De-emphasis Switch Assembly (AWX-095)

Symbol	Description			Part No.
	Slide switch (DE-EMPHASIS)			ASH-015
C1	Mylar capacitor	0.0012	50V	CQMA 122J 50
C2	Mylar capacitor	0.0012	50V	CQMA 122J 50

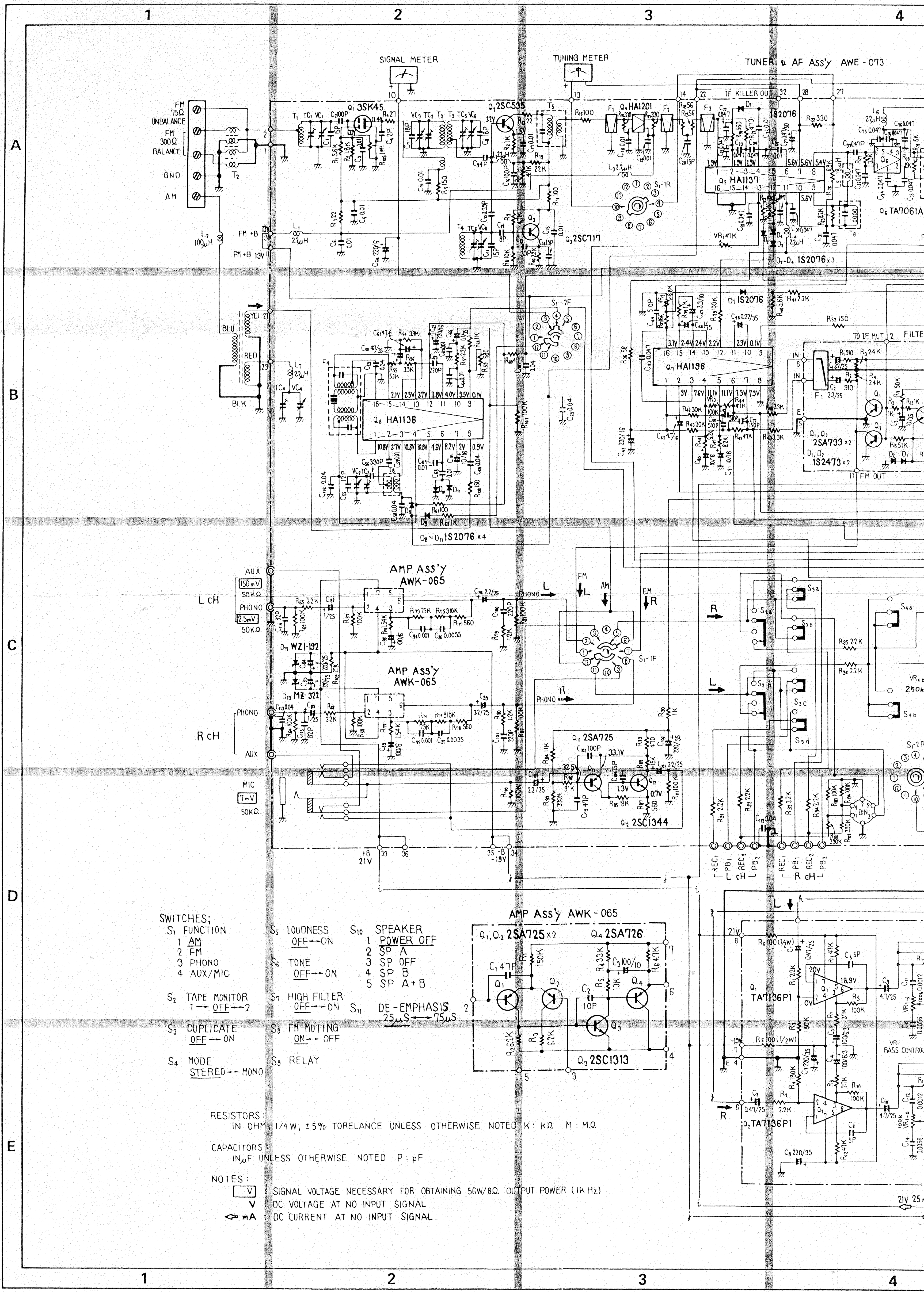
AMENDMENT TO SX-750/KU·KC Service Manual

A misprint appears on page 52 "12.5 TONE CONTROL ASSEMBLY (AWG-046)" in point of voltage value.
Please replace the original P.C. Board by the ones provided below.


AWH-046 No.30
AWH-046 No.27
AWE-073 No.15
AWE-073 No.16
1
2
3
4
5
6
7
8
9
R28 1M
R27 1M
C19 0.0027
C20 0.0027
R29 2K
R30 2K
R26 12K
R25 12K
R1 2.2K
C1 0.47/25
C2 0.47/25
R2 2.2K
R4 180K
10.7V
30 mV
18.6V
17V
20.3V
R10 100K
R14 51K
R13 51K
C10 4.7/25
Q2
TA7136P1
C4 100/6
R8 2.7K
R12 47K
C6 5P
C5 5P
C9 4.7/25
R3 180K
C3 100/6
Q1
R7 2.7K
R9 100K
R11 47K
TA7136P1
R5 100
R6 100
C7 220/35
C8 220/35
R22 10K
R24 6.8K
R16 270K
C14 0.0056
C13 0.0056
C16 0.018
C18 0.082
S2
R15 270K
S1
C12 0.0012
R21 10K
R23 6.8K
C11 0.0012
VR1 100K (A2)
R18 24K
C15 0.018
R17 24K
C17 0.082
VR2 100K (A2)
R20 4.3K
R19 4.3K
AWE-073 No.34 (−19V)
AWM-094 No.1 (−19V)
AWH-046 No.28 (−19V)
AWE-073 No.33 (+21V)
AWH-046 No.21 (+21V)

AM/FM STEREO RECEIVER

SX-750 KC KU


1
2
3
4
A
B
C
D
E
SIGNAL METER
TUNING METER
TUNER & AF Ass'y AWE-073
FM 75Ω UNBALANCE
FM 300Ω BALANCE
GND
AM
Q1 3SK45
Q2 2SC535
Q3 2SC717
Q4 HA1201
Q5 HA1137
Q6 TA7061A
Q7 HA1196
Q8 HA1138
Q1, Q2 2SA733 ×2
D1, D2 1S2473 ×2
D7~D9 1S2076 ×3
D8~D11 1S2076 ×4
IF KILLER OUT
TO IF MUT
FILTE
FM OUT
S1-1R
S1-2F
S1-1F
AUX
PHONO
MIC
150mV 50KΩ
2.5mV 50KΩ
7mV 50KΩ
LcH
RcH
AMP ASS'Y AWK-065
D12 WZ1-192
D13 MZ-322
Q11 2SA725
Q12 2SC1344
FM
AM
L
R
REC1
PB1
REC2
PB2
L cH
R cH
+B 21V
-19V
AMP Ass'y AWK-065
Q1, Q2 2SA725 ×2
Q4 2SA726
Q3 2SC1313
Q1 TA7136P1
Q2 TA7136P1
VR1 BASS CONTROL
S3a
S3b
S3c
S3d
S4a
S4b
DIN

SWITCHES;

S1 FUNCTION
  1 AM
  2 FM
  3 PHONO
  4 AUX/MIC

S2 TAPE MONITOR
  1 ←→ OFF ←→ 2

S3 DUPLICATE
  OFF ←→ ON

S4 MODE
  STEREO ←→ MONO

S5 LOUDNESS
  OFF ←→ ON

S6 TONE
  OFF ←→ ON

S7 HIGH FILTER
  OFF ←→ ON

S8 FM MUTING
  ON ←→ OFF

S9 RELAY

S10 SPEAKER
  1 POWER OFF
  2 SP A
  3 SP OFF
  4 SP B
  5 SP A+B

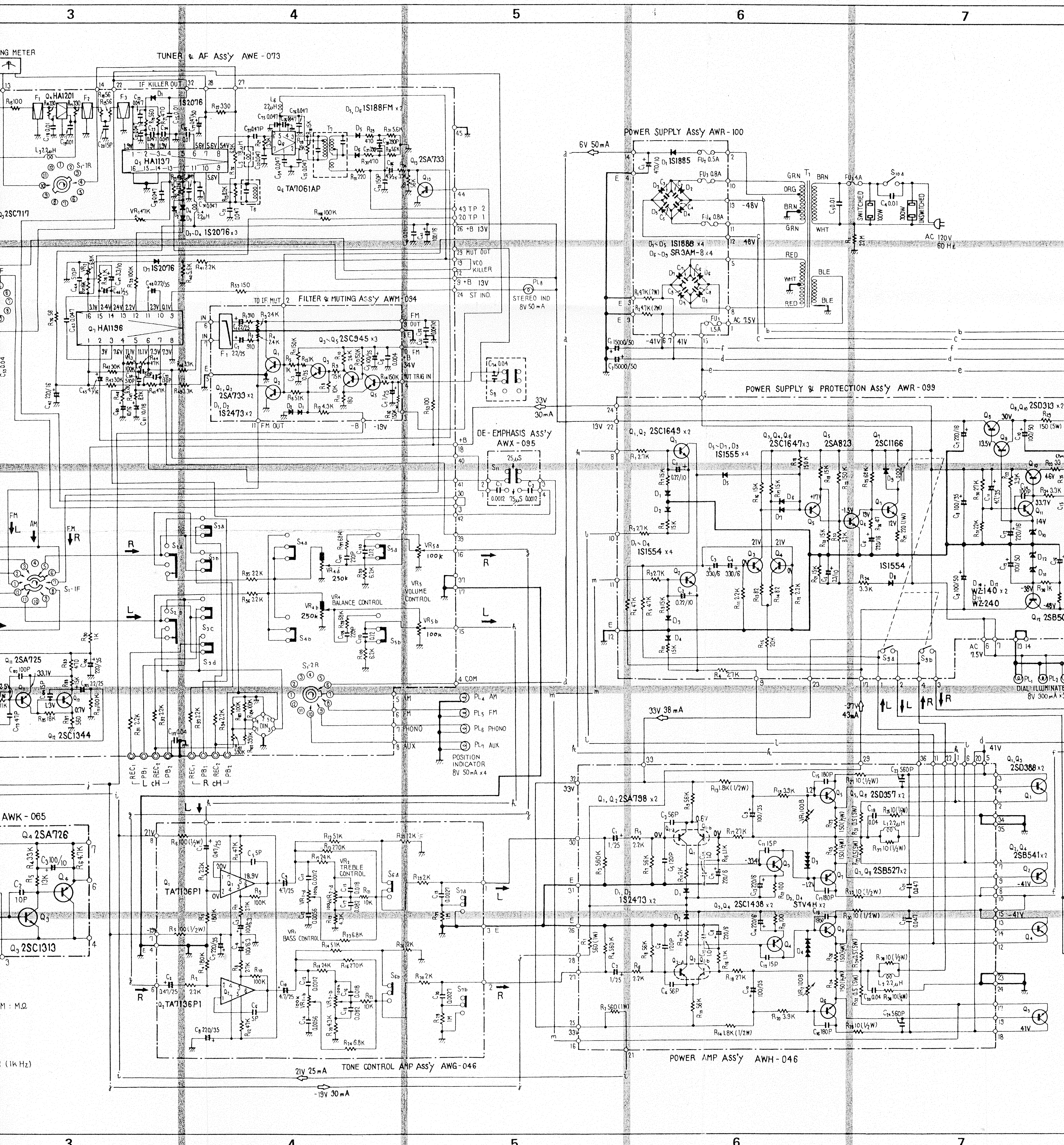
S11 DE-EMPHASIS
  25μS ←→ 75μS

RESISTORS:
IN OHM, 1/4W, ±5% TORELANCE UNLESS OTHERWISE NOTED K: kΩ M: MΩ

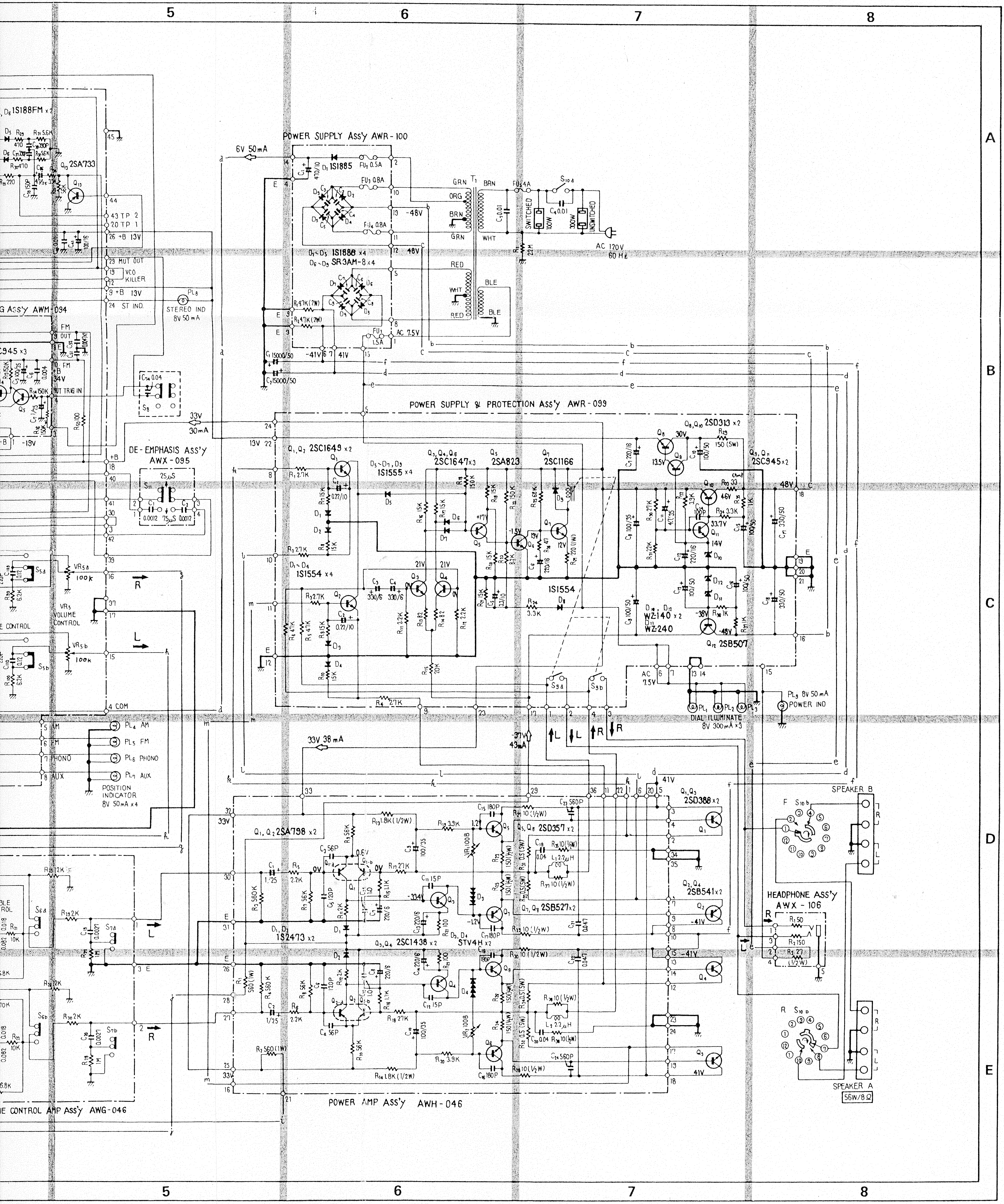
CAPACITORS:
IN μF UNLESS OTHERWISE NOTED P: pF

NOTES:
▭V : SIGNAL VOLTAGE NECESSARY FOR OBTAINING 56W/8Ω OUTPUT POWER (1kHz)
V : DC VOLTAGE AT NO INPUT SIGNAL
⇦ mA : DC CURRENT AT NO INPUT SIGNAL

KC
KU


3
4
5
6
7
TUNER & AF Ass'y AWE-073
IF KILLER OUT
Q4 HA1201
Q5 HA1137
Q6 TA7061AP
Q7 HA1196
Q12 2SA733
Q13
D1~D4 1S2076 x3
D7 1S2076
D5, D6 1S188FM x2
Q9 2SC717
S1-1R
S1-1F
ST IND.
STEREO IND 8V 50mA
PL8
MUT OUT
VCO KILLER
TP 1
TP 2
FILTER & MUTING Ass'y AWM-094
TO IF MUT
Q1, Q2 2SA733 x2
Q3~Q5 2SC945 x3
D1, D2 1S2473 x2
FM OUT
MUT TRIG IN
DE-EMPHASIS Ass'y AWX-095
S11
25μS
75μS
S3a
S3b
S3c
S3d
S4a
S4b
S5a
S5b
VR5a
VR5b
VR5 VOLUME CONTROL
VR4 BALANCE CONTROL
S1-2R
DIN
PL4 AM
PL5 FM
PL6 PHONO
PL7 AUX
POSITION INDICATOR 8V 50mA x4
AM
FM
PHONO
AUX
COM
REC1
PB1
REC2
PB2
L cH
R cH
Q11 2SA725
Q12 2SC1344
AWK-065
Q4 2SA726
Q3 2SC1313
M : MΩ
(1kHz)
TONE CONTROL AMP Ass'y AWG-046
Q1 TA7136P1
Q2 TA7136P1
VR2 TREBLE CONTROL
VR1 BASS CONTROL
21V 25mA
-19V 30mA
POWER SUPPLY Ass'y AWR-100
6V 50mA
D1 1S1885
D1~D5 1S1888 x4
D6~D9 SR3AM-8 x4
FU1 0.5A
FU2 0.8A
FU3 0.8A
FU4 4A
FU5 1.5A
GRN
BRN
ORG
WHT
RED
BLE
SWITCHED 100W
UNSWITCHED 300W
S10a
AC 120V 60Hz
AC 7.5V
-48V
48V
-41V
41V
POWER SUPPLY & PROTECTION Ass'y AWR-099
33V 30mA
13V
Q1, Q2 2SC1649 x2
Q3, Q4, Q6 2SC1647 x3
Q5 2SA823
Q7 2SC1166
Q8, Q10 2SD313 x2
D1~D4 1S1554 x4
D5~D7, D9 1S1555 x4
D8 1S1554
D11, D12 WZ-140 x2
D11 WZ-240
Q11 2SB50
S9a
S9b
DIAL ILLUMINAT 8V 300mA
33V 38mA
-37V 43mA
POWER AMP Ass'y AWH-046
Q1, Q2 2SA798 x2
Q3, Q4 2SC1438 x2
Q5, Q6 2SD357 x2
Q7, Q8 2SB527 x2
D1, D2 1S2473 x2
D3, D4 STV4H x2
VR1 100B
VR2 100B
Q1, Q3 2SD388 x2
Q2, Q4 2SB541 x2
41V
-41V
L
R

PIONEER


5
6
7
8
A
B
C
D
E
POWER SUPPLY Ass'y AWR-100
6V 50mA
D₁ 1S1885
FU₂ 0.5A
FU₃ 0.8A
FU₄ 0.8A
FU₆ 4A
FU₁ 1.5A
D₂~D₅ 1S1888 x4
D₆~D₉ SR3AM-8 x4
-48V
48V
AC 7.5V
-41V
41V
GRN
ORG
BRN
WHT
RED
BLE
T₁
C₁₀ 0.01
C₄ 0.01
S₁₀ a
SWITCHED 100W
UNSWITCHED 300W
R₁ 2.2M
AC 120V 60 Hz
R₁ 47K (2W)
R₂ 47K (2W)
C₁ 15000/50
C₂ 15000/50
POWER SUPPLY & PROTECTION Ass'y AWR-099
33V 30mA
Q₁, Q₇ 2SC1649 x2
D₅~D₇, D₉ 1S1555 x4
Q₂, Q₃, Q₆ 2SC1647 x3
Q₅ 2SA823
Q₇ 2SC1166
Q₈, Q₁₀ 2SD313 x2
Q₉, Q₁₁ 2SC945 x2
D₁~D₄ 1S1554 x4
1S1554
D₁₁, D₁₂ WZ-140 x2
D₁₃ WZ-240
Q₁₂ 2SB507
30V
13.5V
46V
33.7V
14V
-38V
-48V
21V
21V
-1.5V
13V
12V
47V
+17V
AC 7.5V
S₉ a
S₉ b
PL₁ PL₂ PL₃
DIAL ILLUMINATE 8V 300mA x3
PL₉ 8V 50mA POWER IND
33V 38mA
37V 43mA
41V
L
R
POWER AMP Ass'y AWH-046
Q₁, Q₂ 2SA798 x2
Q₃, Q₄ 2SC1438 x2
D₁, D₂ 1S2473 x2
D₃, D₄ STV4H x2
Q₅, Q₆ 2SD357 x2
Q₇, Q₈ 2SB527 x2
VR₁ 100B
VR₂ 100B
L₁ 2.2μH
L₂ 2.2μH
0.6V
0V
-1.2V
-33V
Q₁, Q₃ 2SD388 x2
Q₂, Q₄ 2SB541 x2
-41V
41V
SPEAKER B
SPEAKER A
56W/8Ω
S₁₀ b
S₁₀ c
HEADPHONE Ass'y AWX-106
R₁ 50
R₂ 150
R₃ 27 (1/2W)
DE-EMPHASIS Ass'y AWX-095
25μS
75μS
0.0012
S₁₁
STEREO IND 8V 50mA
PL₈
C₁₄ 0.04
S₈
VR₅ VOLUME CONTROL
VR₅a 100k
VR₅b 100k
POSITION INDICATOR 8V 50mA x4
PL₄ AM
PL₅ FM
PL₆ PHONO
PL₇ AUX
D₆ 1S188FM x2
Q₁₃ 2SA733
43 TP 2
20 TP 1
26 +B 13V
23 MUT OUT
VCO KILLER
9 +B 13V
24 ST IND.
AWH-094
2SC945 x3
FM OUT
34V
MUT TRIG IN
-13V
+B
4 COM
AM
FM
PHONO
AUX
TONE CONTROL AMP Ass'y AWG-046